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ABSTRACT

The purpose of the study was to gain empirical knowledge about the relationships between personality traits, level of acculturation, and achievement among Mexican American children as a base to determine appropriate strategies to improve school adjustment. Ninety Mexican American 8th-graders in San Antonio were assessed. Among the measurement tools used were the California Comprehensive Test of Basic Skills and Anderson and Evan's Language Usage in the Home Scale. The findings were that scores on the personality and achievement measures increased with acculturation; acculturation group differences on locus of control and achievement motivation were obscured by sex differences; an active coping style is related to high achievement in school for males more so than females; and acculturation and socioeconomic status, in combination, predicted significant amounts of variance in all achievement criteria and all personality criteria except achievement motivation. Results, in part, suggest that a future study include an achievement via conformance measure as a means of improving prediction of female achievement; that comparisons with Anglo groups would be strengthened by using an Anglo sample from the same schools as the Mexican American sample; and that a description of the reference group should be included with self-concept findings. Specific suggestions were made for developing internal control and achievement motivation. Measurement instruments are appended. (Author/JB)

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# PERSONALITY TRAITS AND ACADEMIC ACHIEVEMENT AMONG MEXICAN-AMERICAN STUDENTS

by

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DISSERTATION

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AMONG MEXICAN-AMERICAN STUDENTS

APPROVED BY SUPERVISORY COMMITTEE:

# P R E F A C E

This study could not have been completed without the cooperation and support of many persons, and probably would not have been undertaken without the encouragement of many others.

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Self-Concept of Ability Scale, and the Father's and Mother's Independence Training Scale with Mexican-American groups in other areas. Dr. Irving Bialer, Principal Research Scientist, Child Psychiatric Evaluation Research Unit, Brooklyn, New York, permitted use of his locus of control measure.

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D. B. R.

The University of Texas at Austin
July, 1971

To Ricardo Alfredo Lanning y Soto B.

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# INTRODUCTION

The problems of Mexican-American children in school have been well documented and are evidenced by depressed academic achievement and by a substantially higher dropout rate than for either Negro or white children of comparable socioeconomic status. The majority of social scientists who have studied the Mexican-American culture have described a similar group character or modal personality, the main dimensions of which are a feeling of external control, dependency, a negative self-concept, noncompetitiveness with a negative value placed on excellence, and an overall passive coping style. Some writers in the field believe that the described personality dimensions are shaped by cultural beliefs and values, with more or less emphasis on the translation of those beliefs and values into child-rearing practices or on the total environmental impact on the developing personality. Recently increasing attention has been paid to intracultural variation (Kluckhohn and Strodtbeck, 1961; and Child, 1968). A related explanation is that constellations of behaviors are determined by sociocultural premises held by a majority of the members of a given culture. Others believe that

the modal personality is associated with low socioeconomic status and is common to the majority of this population regardless of cultural background (Ulibiarri, 1958; and Lewis, 1959). Another recent view is that the modal personality described by social scientists is a distorted stereotype because Mexican-American participation in labor strife and unionization has disproved passivity (Romano, 1968).

There is some supportive evidence for each of the above viewpoints; however, few studies have attempted to assess the impact of culture on personality, with SES held constant, or to determine whether systematic differences in the modal personality are associated with degree of acculturation. Most of the research that has accumulated relating personality variables to academic achievement has been of the single-variable variety; however, recently multidimensional studies have begun to appear with the purpose of assessing the interrelations among personality variables and determining which are independently related to achievement.

Most current behavior theories hold that behavior is a function of both personality and situation variables. The large body of research concerned with

correlates of academic achievement indicates that there are sufficient uniformities across the methods and goals of public education to make some general statements about which pupil characteristics are associated with academic achievement. Because ability accounts for less than half the variance in achievement, the nonintellectual correlates merit attention (Lavin, 1965). If the concept of the Mexican-American modal personality is valid, research evidence suggests that the dimensions of that personality might be negative achievement factors within the American educational system. Any attempt to improve educational opportunities for Mexican-American children should start with the assessment of a representative sample of children on the relevant dimensions in order to identify possible discrepancies between the characteristics of the children and the values of the school; then it should be possible to devise teaching approach strategies to minimize conflict in attaining educational goals.

## STATEMENT OF THE PROBLEM

The problem of this study concerns: (a) identification of modal personality traits in Mexican-American children, (b) the relationship between degree of

acculturation and modal personality traits, and (c) the relationship between overall coping style and achievement.

The purpose of the study is to gain empirical knowledge about the above relationships as a base to determine appropriate strategies to improve the academic and social adjustment of Mexican-American school children.

Ninety Mexican-American eighth grade students will be assessed on the following dimensions: (a) locus of control, (b) independence training, (c) self-concept of ability, and (d) achievement motivation. In addition, measures of socioeconomic status and Spanish-English language usage (as an index of acculturation) will be obtained on each subject. The achievement measures to be used are the total score of the California Comprehensive Test of Basic Skills, the Reading, Arithmetic, and Study Skills subtests, and English and math grades. Students will be divided into three groups according to scores on the acculturation measure and the group means on each measure will be submitted to analysis of variance to determine if significant personality differences exists between acculturation groups. The scores on the personality measures will represent coping style, and statistical procedures will be applied to determine the relationship

between coping style and achievement. The relationships between acculturation, with SES held constant insofar as possible, and the separate personality measures and achievement will be examined.

## BACKGROUND OF THE STUDY

Demographic Data: According to Browning and McLemore (1964), the Spanish-surnamed population of Texas comprises 14.8% of the total population; 54.8% are native-born of native parents, 31.2% are native-born with at least one foreign-born parent, and 14.0% are foreign-born. In 1960, their median educational level was 6.1, compared to 8.1 for Negroes and 11.5 for Anglos. Twenty-three percent had no formal education, compared to 5.4% for Negroes and 1.1% for Anglos. In 1960, 80.2% of Spanish-surnamed children between 5 and 15 years were in school and 46.2% between 16 and 19 years, indicating a sharp increase in the dropout rate after age 15.

The median income of Spanish-surnamed individuals in Texas in 1960 was 49% of the Anglo median income and lower than that of Spanish-surnamed populations of California, Arizona, New Mexico, and Colorado. There was no difference in income between native-born with native

parents and native-born with foreign parents. Spanish-surnamed individuals are superior to nonwhites in occupational status and income, but inferior in education.

Mexican-American Culture. There is evidence that the Mexican-American is among the least assimilated of minority groups (Steglich, 1967), and has maintained its native language to a greater extent than any other ethnic group (Grebler, Moore, and Guzman, 1970). Kluckhohn (Kluckhohn and Strodtbeck, 1961) suggested that the relative slowness of assimilation occurs because the Mexican culture differs more from the American culture than do the cultures of other minority groups.

Madsen (1964) called acculturation among the Mexican-Americans a middle or upper class phenomenon. Heller (1968) referred to the "up and out mobility" of Mexican-Americans, meaning that successful Mexican-Americans leave the the Mexican-American community, cutting their ties and at the same time being rejected by the community. The disassociation from the Mexican-American group produces a need for a new identity and a susceptibility to the influences of the dominant culture which should result in a rapid increase in acculturation at this point in time. This suggests that, although SES and acculturation

vary together, the rise in SES begins earlier and the rise in acculturation is slow until SES reaches a middle class point at which time acculturation rises sharply.

Kluckhohn (Kluckhohn and Strodtbeck, 1961) described the American cultural value orientations as: mastery over nature, future time, doing (as opposed to being), and individualism, with occupational emphasis. She described the Mexican-American value orientations as: subjugation to nature, present time, being, and lineality (authority rests in parents or the eldest son), with emphasis on religion and recreation. Patterns of value orientations vary both between and within cultures. Basic changes in a culture come about as a result of interaction between internal variation and external pressures. The variant individuals in a culture are the instigators of change; therefore, the better integrated a culture (the less internal variation) the more resistant it is to the pressures of another culture.

Manual (1965) stated that the majority of Mexican-Americans in Texas come from a Mexican folk culture. A comparison of the beliefs and value orientations of the Mexican folk culture described by Romney and Romney (1966) and the Mexican-American culture as described by Madsen

(1964), Saunders (1954), and Kluckhohn (Kluckhohn and Strodtbeck, 1961) reveal a high degree of similarity. Points of similarity are a present time orientation, control by fate or God, emphasis on the group rather than on the individual, and valuing of personal characteristics rather than achievement. The two latter values result in noncompetitiveness.

There are also some points of similarity, as well as differences, in the values and child-rearing practices of the Mexican-American culture and low socioeconomic class culture (Eells, Davis, Havighurst, Herrick and Tyler, 1951; White, 1957; and Hess, Shipman, Brophy, and Bear, 1968). Both have child-rearing practices that are low on responsiveness, warmth, and praise, and which involve minimal explaining and verbal communication. The two groups differ in that Mexican-Americans are later and less severe with independence training. Mexican-Americans also place greater stress on conformity to group norms, conformity in the sense of meeting but not exceeding norms (Madsen, 1964, and Angel, 1967). Both cultures are characterized by a feeling of external control; however, in the Mexican-American culture, it seems probable that control by fate or God is a more important component than

control by authority and, therefore, passive acceptance is more likely than aggression. The pattern of similarities and differences is such that it seems likely that culture acts as a magnifier of a feeling of external control, dependency, and noncompetiveness when low SES and Mexican-American culture coincide.

Rotter (1966) developed the implications of a belief in internal or external control in terms of learning theory. The effect of reinforcement depends on whether the person sees his behavior as causing the reward. As a result of individual reinforcement history, the individual builds up a generalized expectancy with respect to locus of control. The person who believes control is inner will have a greater strengthening effect from reinforcement than a person who believes control is external.

Rotter (1966) hypothesized some types of behavior probable for an individual who has a strong belief in internal control. Such a person should be more alert to environmental cues, more active with respect to the environment, be influenced to a greater degree by reinforcement of achievement, and be less susceptible to the influence of others.

Murphy (1962) associated self-concept with coping style in that the outcomes of the individual's coping

efforts determine how he perceives himself. The passive coper perceives himself as ineffective because he is operated upon by the environment. Self-doubting is one of the components of the passive syndrome described by Diaz-Guerrero (1967). Although Angel (1967) described the negative self-concept of the Mexican-American child as developing out of his confrontation with the Anglo middle class culture, there are theoretical bases for assuming that the negative self-evaluation exists independent of the confrontation; however, it seems probable that the confrontation magnifies it.

The culturally-based personality traits described by Saunders (1954), Kluckhohn (Kluckhohn and Strodtbeck, 1961), and Madsen (1964) are some of the components of the passive coping style described by Diaz-Guerrero (1967). Diaz-Gurrero has developed a construct, the sociocultural premise, for use in cross-cultural studies. A sociocultural premise is a "culturally significant statement which is held by an operationally defined majority of the subjects in a given culture, and it is also, preferably, a statement that will be held differentially across cultures (p. 263)." Diaz-Guerrero described one such premise that should determine a large number of measurable behaviors, and that should show cross-cultural variation.

It concerns the way in which a given culture deals with stress. In one culture, e.g. the United States, people believe that the best way to deal with stress is by actively doing something to change the source of stress. In another culture, e.g. Mexico, people believe that the best way to deal with stress is by changing themselves, to adapt to the situation. These two modes of coping form the active-passive syndrome, which consists of a series of dimensions. There appears to be a relationship between the stage of development of a culture and the coping style of the people. The underdeveloped and, to some extent, the developing cultures exhibit the passive syndrome and the industrialized cultures the active syndrome. Also, in some countries the coping style is part active and part passive.

Murphy (1962) defined coping operations as means of dealing with a threat or obtaining gratification. Consistent with Diaz-Guerrero's multidimensional view of coping style, she stated that each individual has a number of coping strategies, many or few, and the total range makes up his particular coping style. Coping style develops out of the interaction between individual tendencies and the environment, whichever is stronger exerting the

greater influence. In the Mexican-American culture, the press for conformity to norms should give more weight to environmental impact unless predispositions are very strong indeed. A strong predisposition to activity may produce the cultural variant described by Kluckhohn.

Murphy noted that creativity is not a function of activity level. She did, however, state that active children have a wider range of environmental encounters and thereby develop more interests and learn more ways of handling frustrations and meeting problems, but they also experience more frustration, more often risk failure, and therefore have a higher probability of losing integration.

The American Schools. Dahke (1958) wrote that American schools best serve children who are highly motivated to achieve. Included in the norms of the American school system he listed are: self-control, self-direction, and individual responsibility. These norms are consistent with the achievement-oriented nature of American society (Parson and Shils, 1951), in which an individual is judged by what he does rather than by who he is.

Lavin (1965) reviewed research findings on the personality correlates of academic achievement. Need for

achievement, independence, and a positive self-image correlate positively with achievement. Need for affiliation is a negative factor. Crandall and Battle (1970) summarized recent reviews of research on academic performance. They found variables associated with poor performance are: (a) lack of realism about self and environment, (b) defensiveness about one's inadequacies, (c) negative self-concept, (d) dependency, implusivity, and irresponsibility, and (e) strong social versus academic motivation.

Conflict Between Culture and Schools. A table listing the personality dimensions described by the cited studies of Mexican-American culture and the correlates of academic achievement resulting from educational studies suggests that culturally-based personality traits may depress academic achievement.

| Culturally-Based Personality Traits | Correlates of Academic Achievement in American Schools |
|---|---|
| External Control | Internal Control |
| Dependency | Independence |
| Negative Self-Concept | Positive Self-Concept |
| Noncompetiveness | Achievement Motivation |

## Research Findings

External versus internal control. Crandall, Katkovsky, and Preston (1962) hypothesized that the internal child's greater approach behaviors should result in his acquiring more facts, concepts, and problem solving skills which would be reflected in achievement test scores. They found that internal boys had higher reading achievement scores, but no significant relationship for girls was demonstrated. James (1965) found internals to be more persistent at a complex logical puzzle. Chance (1965) found, in a sample of third through seventh graders, internality to be positively related to reading, arithmetic, and spelling achievement test scores for both sexes. The internal scorers in the Hersch and Scheibe (1967) study described themselves as more active, striving, achieving, independent, and effective than did the external scorers. Graves (1961) studied a tri-ethnic sample and found the whites least external, followed by the Spanish-Americans, and the Indians most external. Ethnicity was an important variable with other factors, including SES, controlled. As a result of a longitudinal study of achievement development, Crandall and Battle (1970) concluded that internal control might be considered an essential, but not sufficient

condition, for the development of achievement behavior. Kluckhohn (Kluckhohn and Stordtbeck, 1961) found some evidence of a superficial change in beliefs about the man-nature relationship in a Mexican-American population, in the direction of internality. Coleman, Campbell, Hobson, McPartland, Wood, Weinfeld, and York (1966) concluded that self-concept with respect to learning and sense of control of environment are related more strongly to achievement than any other family, attitudinal, teacher, or school variables studied.

Dependency versus Independence. Elder (1962) found that active independence training, perhaps more than any other variable, is associated with high achievement. Young (1957) defined independence as the degree of parental training for self-decision making and found that need for achievement and independence varied directly. Rau (1963) wrote that dependent children have been shown to be more distractible. She hypothesized that they are oriented toward interpersonal cues and, therefore, handicapped on tasks requiring sequential thought. Anderson and Evans (1969) found that independence training and self-concept of ability were the best achievement predictors for Mexican-Americans, whereas among Anglos only self-concept

of ability was a good predictor. They interpreted this finding to infer that the majority of Anglos had a sufficient degree of independence training to discount it as a factor. They also found that as the amount of English spoken in the Mexican-American homes increased, independence training increased. Kluckhohn (Kluckhohn and Strodtbeck, 1961), in a study of Mexican-Americans, found some evidence of basic cultural change taking place in the form of movement from lineality to individualism.

Self-concept of Ability. A study by Jourard and Remy (1955) indicates a high degree of relationship between self-appraisal by children and their perception of their parents' appraisal of them. Brookover and Thomas (1964) found self-concept of ability to be related significantly to the perception of the evaluation of self by significant others, especially parents. Jersild (1952) and Brookover, Paterson, and Thomas (1962) found a significant relationship between student achievement and positive self-image. McDavid's study (1959) suggests a spiral relationship between self-concept and academic achievement in that academic success may result in a more positive self-image which, in turn, may lead to increased academic success. Coopersmith (1968) found that children

with high self-esteem set higher standards for themselves and come closer to meeting those standards than children with low self-esteem. Wilson (1968) surveyed Arizona teachers and found that most rated Mexican-American children negative with respect to self-concept.

Noncompetitiveness versus Achievement Motivation. Madsen (1964) wrote, "The push to excel and compete for grades violates the noncompetitive values of La Raza. A Mexican-American student who conspicuously outshines his agemates in academic endeavors is mocked or shunned (p. 107)." The Crandall and Battle (1970) review of achievement research indicates that social motivation, which is implicit in the Mexican-American noncompetitiveness, is negatively correlated with achievement motivation. Baldwin (1948) found that children from democratic homes tend to be more competitive than those from authoritarian homes. Anderson and Anderson (1962) stated that Mexican psychiatrists openly regard their culture as highly authoritarian, and Rosen and D'Andrade (1959) found that boys with low achievement motivation tended to have authoritarian fathers. Saunders (1954), Kluckhohn and Strodtbeck (1961), Demos (1962), and Manual (1965) have reported differences in motivation between Mexican-Americans and

Anglo-Americans, with Anglo-Americans demonstrating a higher need for achievement. Anderson and Evans (1969) used achievement training and Spanish-English language usage measures with Mexican-American students and found achievement training highly related to language, increasing with the amount of English spoken. Lavin (1965) found that studies show a consistent, though weak, positive relationship between need for achievement and academic performance.

Passive versus Active Coping. Swartz, Witzke, and Swartz (1967) reported a cross-cultural study of personality using the Holtzman Inkblot Technique. Mexico City and Austin, Texas samples of children were matched on age, sex, and SES. Findings indicate that the Mexico City child has a passive coping style. He is willing to cooperate, tries to please the examiner, and tends to be cautious in the testing situation. The American child approaches the testing situation as a challenge to be mastered, an opportunity to show how much he can do. Murphy (1962) found a positive correlation between activity and capacity to cope with the environment.

Manaster (1969) investigated the relationships between sense of competence, coping style, and achievement

using projective measures. The sense of competence variables were: internal versus external control and positive versus negative outcome. The coping variables were: active versus passive, instrumental versus expressive, and positive versus negative affect. Manaster stated that coping style had not previously been used as a predictor of achievement. He found (a) a significant relationship between sense of competence and achievement with the effects of intelligence and coping style removed, but (b) no relationship between coping style and achievement when the effects of intelligence and sense of competence were removed. It may be that locus of control is the crucial variable in the relationship between sense of competence and achievement. This is suggested by the locus of control studies cited earlier. The present study is based on the Diaz-Gurrero definition of the active-passive coping syndrome which includes the locus of control dimension.

Socioeconomic Status. Lavin (1965) described 13 major studies relating socioeconomic status to academic performance, all of which indicate that low SES is a negative factor. Wolf's (1964) findings suggest that the relationship between SES and performance may be due to class related child-rearing practices and family interaction patterns.

Acculturation. In the earlier comparison between low SES and Mexican-American cultures, it was found that Mexican-Americans are later and less severe with independence training and place greater emphasis on conformity to group norms which implies that the Mexican-American culture acts as a magnifier of dependency and noncompetitiveness. In the discussion of coping styles, it was indicated that the Mexican culture has a negative impact on self-concept. In view of these relationships, low acculturation should be a negative achievement factor, and the Browning and McLemore (1964) data indicate that this is true.

Sex Differences. Maccoby (1966) presented evidence that socialization factors affect boys and girls differently; therefore, sex differences within the Mexican-American population are anticipated, but these differences may not be in the same direction as differences found in the American population. As acculturation reaches a high level, however, they should approximate the sex differences found in the American children. Within our culture, the evidence indicates that girls tend to be somewhat less independent, to evaluate themselves less positively (Wylie, 1963; Matteson, 1956), to have lower

achievement motivation (Adams and Sarason, 1963; McGuire, 1961), and to be less active than boys (Kagan and Moss, 1962; Witkin, Dyk, Faterson, Goddenough, and Karp, 1962). Battle and Rotter (1963) found no sex difference in locus of control.

According to Grebler, Moore, and Guzman (1970), Mexican-American parents at all levels tend to be more authoritarian toward their children than American parents. Gill and Spilka (1962) found that although the Mexican-American culture is paternalistic, it is the mother who is dominant with the children. In one of the few Mexican-American studies to take sex into account, they found that the effect of mother-domination in a paternalistic culture is different for boys and girls. High mother-domination was associated with overachievement in girls and with underachievement in boys. This finding may be related to Madsen's (1970) finding that Mexican-American girls were more competitive than Mexican-American boys.

## Summary

The majority of the Mexican-Americans of Texas come from a Mexican folk culture, and studies indicate that they have maintained many of the values of that

culture. A number of studies of the Mexican-American culture have described a modal personality, the major dimensions of which are external control, dependency, a negative self-concept, and noncompetitiveness. These personality characteristics are some of the components of the passive coping style defined by Diaz-Gurrero (1967). Correlates of academic achievement that are opposed to the culturally-based personality characteristics are internal control, independence, a positive self-concept, and a need for achievement.

Acculturation is not an all or none affair, but rather a process of change. For the Mexican-American, it appears to involve moving from a passive to an active coping style and because identified correlates of academic achievement in American schools are components of the active coping style, coping style and acculturation should correlate positively with achievement. There is evidence that some values are more susceptible to change than others and that certain values must change before others can change. The Kluckhohn (Kluckhohn and Strodtbeck, 1961) study suggests that a move toward internal control and independence occur early in acculturation, and Rotter's (1966) theoretical discussion of locus of control suggests

that a feeling of internal control is basic to independence, a positive self-concept, and achievement motivation. If the up and out mobility described by Heller (1968) and implied by Madsen (1964) is a fact, and if the negative self-concept is a component of the passive syndrome, as described by Diaz-Guerrero (1967), then the self-concept should not be positive until a high level of acculturation is reached. It is possible that self-concept is lowest at a moderate level of acculturation, the point at which the individual leaves his own group and does not yet feel a part of the dominant group. Studies cited have indicated that a feeling of internal control (Crandall, 1963), independence (Rosen, 1962), and a positive self-concept (Coopersmith, 1968) are essential to the development of achievement motivation.

Some similarities and differences between the Mexican-American and the low SES cultures have been pointed out. Since the majority of Mexican-Americans belong to both cultures simultaneously and because acculturation and SES tend to covary, it is difficult to separate the influences of the two. There is some evidence, however, that rise in SES precedes the rise in acculturation and is sharper in the early phases of the process and that

when a middle or upper level of SES is reached there is a sharp increase in acculturation. It was suggested that when Mexican-American culture and low SES coincide, that culture acts as a magnifier of external control, dependency, negative self-concept, and noncompetitiveness.

## HYPOTHESES

I. The sample will be divided into three groups according to level of acculturation, with Group I representing the lowest level of acculturation and Group III the highest level, and then the acculturation groups divided by sex.

   a. Group I will score lowest on measures of internal control, independence, self-concept of ability, and achievement motivation.

   b. Group III will score highest on measures of internal control, independence, self-concept of ability, and achievement motivation.

   c. Group II will be more similar to Group III on internal control, and more similar to Group I on self-concept of ability and achievement motivation.

   d. In Group III, the high acculturation group, it is anticipated that sex differences on the personality measures will be similar to those found in the American culture; therefore, it is predicted that Group III boys will score higher on independence, self-concept of ability, and achievement motivation measures than Group III girls. Sex differences on the personality measures for Groups I and II will be explored.

II. The four personality measures (components of coping style) will add to the prediction of achievement.

III. It is predicted that SES and acculturation, although correlated, will contribute significant separate variance to the four personality measures (components of coping style) and to achievement.

IV. Research evidence suggests that the mother's level of independence training may be a more powerful predictor of achievement than the father's level of independence training and that the effect may be different for boys and for girls; therefore, the relationship between achievement and the mother's and the father's level of independence training (separately) and sex of child will be explored.

## OPERATIONAL DEFINITIONS

External versus Internal Control. External control is defined as an individual's perception of reward as independent of his own behavior, and internal control is defined as a person's perception of reward as contingent on his own behavior. The measure to be used is Bialer's (1961) Locus of Control Self Report Questionnaire. A high score indicates internal control and a low score external control.

Dependency versus Independence. This variable represents a continuum to be measured by the Anderson and Evans Independence Training Scale which consists of five

questions taken from a study by Elder (1962). Guttman scale analysis of the five questions resulted in the coding shown on the copy of the instrument in Appendix A. An independence training score will be obtained for each parent by summing the five responses. The parents' scores will be summed to obtain a total independence score for each student. A low score indicates that the child perceives his parents as autocratic and himself as dependent in regard to decision-making. Selection of this instrument is based on Elder's (1962) finding that independence training, perhaps more than any other variable, is associated with high achievement.

Self-concept of Ability. Self-concept of ability is defined as the individual's evaluation of his own ability compared with that of his peers. Measurement will be by Anderson and Evan's Self-Concept of Ability Scale. Selection of this instrument is based on the findings of Jersild (1952) and Brookover, et al, (1962) that there is a significant relationship between student achievement and positive self-image and the finding of Coopersmith (1968) that children with high self-esteem set higher standards for themselves and come closer to meeting those standards than children with low self-esteem. A high score indicates that the individual feels that his own

ability compares favorably with that of his peers and that he is confident of his ability to succeed in school.

Noncompetitiveness versus Achievement Motivation. Spilka's (Read and Spilka, 1969) achievement motivation measure will be used to measure this variable because the content and vocabulary level are suitable for minority group children as well as white middle class children. The instrument stresses ambition, high goals, and steady and hard work as an avenue to success and achievement. A long range future orientation and a resistance to destructive anxiety and distraction are also represented. A high score represents high schievement motivation.

Passive versus Active Coping. This construct is defined in terms of Diaz-Guerrero's (1967) sociocultural premise: Passive coping involves changing the self to adapt to the situation, and active coping involves actively doing something to change the source of stress. The four personality dimensions described in the immediately preceding sections are components of Diaz-Guerrero's active-passive syndrome; therefore, the individual's scores on the four measures will represent his coping style. Low scores indicate passive coping and high scores active coping.

Socioeconomic Status. There is ample evidence of the relationship between SES and academic achievement

(Lavin, 1965) so that any attempt to assess the impact of culture must involve a means for controlling for SES. Kahl (1953) found that occupational level was the dominant factor in predicting SES; whereas Hollingshead (1957) found that education and occupation accounted for most of the variance in SES. Since this study involves a minority, and therefore an atypical group, SES will be measured by a combination of father's educational level, father's occupational level, and mother's educational level. Occupations will be rated on the Warner, Meeker, and Eells (1949) scale.

Acculturation. Acculturation will be measured by Anderson and Evan's (1969) Language Usage in the Home Scale which assesses the extent to which the individual speaks English in the home. Support for the use of a language measure as an index of acculturation is found in both anthropology and linguistics. The anthropological position (Walter, 1952) is that culture is transmitted through language, that a child learns symbolic values and group consciousness and solidarity through language. From a linguistic viewpoint, Hoijer (1954) wrote, "Language functions, not simply as a device for reporting experience, but also, and more significantly, as a way of defining

experience for its speakers (p. 93)." Language is "a guide to social reality (p. 92)." With specific reference to Spanish, Bull (1965) wrote that the Spanish-speaker sees and organizes reality differently than the English-speaker.

Achievement. The standard scores of the October, 1970 administration of the California Test of Basic Skills, Form Q, Level 3, including Total, Reading, Arithmetic, and Study Skills, and English and math grades will be the achievement measures. The decision to use standardized measures in addition to teacher-assigned grades is based on the findings of Swartz (1967) and Anderson and Evans (1969) that the grades of Mexican-American students were biased upward. It was found that the grades of Anglo students were consistent with standardized measures; whereas the grades of Mexican-American students tended to be higher than standardized measures. Grades will be coded on a 5 point scale (A=4, F=0) and summed for the first three grading periods of the current school year.

Mexican-American Students. Subjects will be eighth grade students enrolled in the San Antonio Independent School District who meet the following criteria: (a) two Spanish-surnamed parents in the home, (b) one of

three acculturation levels to be defined, and (c) an IQ of 80 or above. The last criterion is set to insure adequate comprehension of the instruments.

## ASSUMPTIONS AND LIMITATIONS

Precautions will be taken to insure the anonymity of the participating students. With anonymity assured, it is assumed that subjects will respond to the instruments in an unbiased manner.

In a strict sense, the conclusions cannot be generalized beyond the populations sampled; however, on the other hand, there are no reasons for believing that the populations sampled are selectively different from the larger Mexican-American population. The fact that subjects will be drawn from Tafolla, Mann, and Longfellow Junior High Schools insures a representative range of SES and acculturation.

The California Test of Basic Skills was standardized on a large sample representing 341 school districts in 48 states. The reliability coefficients are uniformly high for all levels. Coefficients of correlation between the California and other standardized achievement test scores reflect a high degree of construct validity, and content validity is good (Buros, 1959).

Gozali and Bialer (1968) reported a test-retest reliability coefficient of .84 for Bialer's (1961) Locus of Control Scale. Nonsignificant Pearson product moment correlations were found between the scale and Couch and Keniston's (1960) Agreement Response Scale, and between the scale and Crandall, Katkovsky, and Crandall's (1965) Children's Social Desirability Scale.

Elder (1962) submitted the Independence Training Scale responses of 12,500 seventh through twelfth grade students to a Guttman scale analysis which indicated that the responses to each of the items should be dichotomized and scored zero and one. Cutting points on the mothers' and the fathers' scales were the same: The scale pattern described three groups of parents, those who are low (0-1), intermediate (2-3), and high on independence training (4-5). Parental independence training was highly related to achievement with SES controlled.

Anderson and Evans (1969) found, for their sample of Mexican-American and Anglo secondary students, that all five questions of the Self-Concept of Ability Scale loaded on a single factor which accounted for 79% of the total variation. Factor scores on this measure were positively related to achievement for both Mexican- and Anglo-Americans.

On the Achievement Motivation measure (SRAM), Read and Spilka (1969) reported a reliability coefficient of .80 for a rural sample of seventh through twelfth grade students, and a reliability coefficient of .71 for an urban sample of ninth and tenth grade students. Estimates of reliability were determined through use of analysis of variance. Winer (1962) reported these coefficients to be identical to those that would be obtained through use of the Kuder-Richardson Formula 20. This measure has good face validity for the population to be sampled. For the urban sample described above, Read and Spilka obtained a significant positive correlation between the measure and grade point average ($r=.316$, $P<.01$). SRAM did not correlate significantly with IQ. The partial correlation coefficient between grade point average and SRAM with IQ held constant was $r=.421$ ($P<.01$). The measure was successful in discriminating between overachieving and normal achieving and between overachieving and underachieving groups ($P<.01$).

The socioeconomic and acculturation measures are straightforward instruments for recording variables that have been found to be relevant to the two constructs.

Copies of all instruments are contained in Appendix A.

## PROCEDURES FOR DATA COLLECTION

Prior to data collection, the instruments will be pilot tested on a group of 30 eighth grade, Mexican-American subjects at Tafolla School in order to determine how much administration time is required and whether any modification of instructions is desirable.

Tafolla, Mann, and Longfellow Junior High Schools have been selected for sampling because these schools represent a wide range of SES and acculturation. As a first procedure, 50 eighth grade girls and 50 eighth grade boys who meet the surname of parents and IQ criteria will be randomly selected at each of the three schools, and the acculturation measure administered. The acculturation scores will be tabulated and the ranges of low, medium, and high acculturation defined. A master list of students who fall within the defined acculturation ranges will be prepared. Students will be selected randomly from that list until 20 boys and 20 girls at each acculturation level who agree to participate in the study are identified. Subjects who have not completed all instruments will be eliminated.

Students will be identified by number to assure anonymity, and the investigator will keep the protocols in her possession between sessions.

## PROCEDURES FOR DATA ANALYSIS

For each of the ninety subjects, the scores on the four personality measures, SES, acculturation, and achievement will be punched on a separate card for computer processing. All analyses will be carried out with standard statistical computer programs published by Veldman (1967) and Jennings (1968).

Hypothesis I. Two-way analyses of variance will be carried out to compare the means of the six sex by acculturation groups on the four personality measures. Then, comparisons will be made of the differences between group means for each measure.

Hypothesis II. Regression analysis will be used with the four personality measures and subject's sex as predictors and the achievement measures as the criteria.

Hypothesis III. Regression analyses will be carried out to determine the independent contribution of SES and acculturation to the prediction of achievement and to each of the personality measures separately.

Hypothesis IV. Regression analyses will be used to predict achievement from the mother's and father's independence training scores for males and females separately.

# RESULTS

Description of the Sample. The means and standard deviations for the sample as a whole on all of the study variables are listed in Table I in Appendix B. Slightly over half of the sample (53%) are females. The average parent did not complete high school, and the average subject in the study was achieving 1.2 years below grade level at the time the California Tests of Achievement were administered in October, 1970. Despite the below grade level achievement, the average subject rated himself as slightly above average on self-concept of ability.

Acculturation groups were defined on the basis of the premeasure, the Family Language Usage Scale. Group I consists of students with scores of 0 through 3, Group II of students with scores of 5 through 7, and Group III of students with scores of 10 through 12. In Appendix B, Table II shows the frequency of each score by group and by sex, Table III indicates the sex by acculturation group means and standard deviations on the variables, and Table IV shows the acculturation group means on all variables. The computer programs used in the analysis of the data are described in Table V, Appendix B.

One of the schools in the original design, Longfellow, was not available for sampling. Twain Junior High

was substituted, but unfortunately this change resulted in a restriction of range in both SES and acculturation. Also, there were insufficient students at Tafolla who met the selection criteria so that additional subjects had to be selected at Cooper Junior High. Cooper is similar to Tafolla in SES and acculturation levels. The percentage of Mexican-American students enrolled in each of the schools is as follows: (a) Cooper, 99%; (b) Tafolla, 97%; (c) Mann, 69%; and (d) Twain, 65.5%.

## Outcome of Hypotheses

Hypothesis I. The first subset of hypotheses concern the relationships among the three acculturation groups on the personality measures. Double classification analyses of variance were carried out (Table I), and *t* tests of the significance of mean differences between groups were computed on the measures that yielded a significant *F* (Table II). Simple analyses of variance were also carried out separately by sex (Table III) and appropriate *t* tests computed (Table IV). The standard error used in the *t* ratio is that recommended by McNemar (1969, p. 323) for examining contrasts called for by a priori hypotheses.

TABLE I

DOUBLE CLASSIFICATION ANALYSES OF VARIANCE

OF SEX BY ACCULTURATION GROUPS

PERSONALITY MEASURES

| Source | df | MS | F |
|---|---|---|---|
| Locus of Control | | | |
| Total | 127 | 8.40 | |
| Between | 5 | 12.40 | |
| Sex (A) | 1 | 4.07 | .49 |
| Acculturation (B) | 2 | 15.75 | 1.91 |
| A × B | 2 | 12.21 | 1.48 |
| Within | 122 | 8.25 | |
| Independence Training | | | |
| Total | 127 | 4.93 | |
| Between | 5 | 16.92 | |
| Sex (A) | 1 | .17 | .04 |
| Acculturation | 2 | 40.96 | 9.23*** |
| A × B | 2 | 1.26 | .28 |
| Within | 122 | 4.44 | |
| Self-Concept | | | |
| Total | 127 | 7.36 | |
| Between | 5 | 18.55 | |
| Sex (A) | 1 | 8.70 | 1.26 |
| Acculturation (B) | 2 | 41.52 | 6.01** |
| A × B | 2 | .9 | .07 |
| Within | 122 | 6.91 | |
| Achievement Motivation | | | |
| Total | 127 | 162.63 | |
| Between | 5 | 517.17 | |
| Sex (A) | 1 | 1023.82 | 6.91** |
| Acculturation (B) | 2 | 238.78 | 1.61 |
| A × B | 2 | 542.25 | 3.66* |
| Within | 122 | 148.10 | |

*p ≤ .05
**p ≤ .01
***p ≤ .001

TABLE II

t TESTS OF SIGNIFICANCE OF MEAN DIFFERENCES ON THE PERSONALITY MEASURES BETWEEN GROUP I, GROUP II, AND GROUP III

| Variable | Comparisons | | |
|---|---|---|---|
| | Group I - Group II | Group I - Group III | Group II - Group III |
| Acculturation Main Effects | | | |
| Independence Training | 1.33 | 3.99*** | 3.03** |
| Self-Concept of Ability | .25 | 2.96** | 3.01** |
| | Group III Males - Group III Females | | |
| Sex by Acculturation Interaction Effects | | | |
| Achievement Motivation | | 3.67*** | |

*P ≤ .05
**P ≤ .01
***P ≤ .001

TABLE III

SIMPLE ANALYSES OF VARIANCE

MALE AND FEMALE ACCULTURATION GROUPS

PERSONALITY MEASURES

| Source | df | MS | F |
|---|---|---|---|
| | Male | | |
| Locus of Control | | | |
| Total | 52 | 9.77 | |
| Groups | 2 | 24.62 | 2.68 |
| Error | 50 | 9.18 | |
| Independence Training | | | |
| Total | 52 | 4.56 | |
| Groups | 2 | 22.22 | 5.76** |
| Error | 50 | | |
| Self-Concept of Ability | | | |
| Total | 52 | 7.89 | |
| Groups | 2 | 22.95 | 3.15* |
| Error | 50 | 7.28 | |
| Achievement Motivation | | | |
| Total | 52 | 203.74 | |
| Groups | 2 | 674.21 | 3.65* |
| Error | 50 | 184.92 | |
| | Female | | |
| Locus of Control | | | |
| Total | 59 | 8.37 | |
| Groups | 2 | .49 | .06 |
| Error | 57 | 8.64 | |
| Independence Training | | | |
| Total | 59 | 5.36 | |
| Groups | 2 | 15.86 | 3.18* |
| Error | 57 | 4.99 | |
| Self-Concept of Ability | | | |
| Total | 59 | 7.34 | |
| Groups | 2 | 22.53 | 3.31* |
| Error | 57 | 6.80 | |
| Achievement Motivation | | | |
| Total | 59 | 130.59 | |
| Groups | 2 | 28.87 | .22 |
| Error | 57 | 134.16 | |

*$p \leq .05$
**$p \leq .01$

TABLE IV

t TESTS OF SIGNIFICANCE OF MEAN DIFFERENCES ON THE PERSONALITY MEASURES BETWEEN GROUP I, GROUP II, AND GROUP III, SEPARATELY BY SEX

| Variable | Comparisons | | |
|---|---|---|---|
| | Group I - Group II | Group I - Group III | Group II - Group III |
| Males | | | |
| Independence Training | .70 | 3.18** | 2.55* |
| Self-Concept of Ability | .33 | 1.95 | 2.31* |
| Achievement Motivation | .06 | 2.25* | 2.39* |
| Females | | | |
| Independence Training | 1.16 | 2.38* | 1.35 |
| Self-Concept of Ability | .01 | 2.20* | 2.23* |

*P ≤ .05
**P ≤ .01

a. The hypothesis that Group I would score lowest on all of the personality measures received partial support. Group I did score lowest on all except achievement motivation; however, the differences between Groups I and II failed to reach statistical significance.

b. The hypothesis that Group III would score highest on all personality measures received support in that Group III means were higher than the means of the other two groups. Group III was significantly higher on independence training and self-concept of ability ($P<.01$). Although Group III means were also higher than Group I and II means on locus of control and achievement motivation, those differences failed to reach statistical significance. Among boys only, the difference between Group III and the next highest group approached significance on locus of control (.08), and reached significance on achievement motivation (.03).

c. The hypothesis that Group II would be more similar to Group III on internal control, and more similar to Group I on self-concept of ability

and achievement motivation received weak support in that the relationships between differences were as predicted. On the locus of control measure, however, the difference between Groups I and II was only very slightly greater than the difference between Groups II and III and did not approach significance. On self-concept of ability, the difference between Groups II and III was significant, and the difference between Groups I and II failed to reach significance. On achievement motivation, the difference between Groups II and III was larger than the difference between Groups I and II, but did not reach significance. Among boys only, the difference between Groups II and III did reach significance; whereas the difference between Groups I and II was negligible.

d. The hypothesis that Group III boys would score higher than Group III girls on independence training, self-concept of ability, and achievement motivation was supported. The boys scored higher on all three measures; however, only the difference on achievement motivation reached

significance. Sex differences within Groups I and II on the personality measures were small. Group I boys were slightly lower than Group I girls on locus of control and independence, and slightly higher on self-concept and achievement motivation. Group II boys were slightly higher than Group II girls on locus of control, self-concept, and achievement motivation, and slightly lower on independence training. None of the differences between Group I and II boys and girls approached significance.

## Discussion

Acculturation. The three acculturation groups differed from one another at a highly significant level ($P<.0001$) on the total Family Language Usage Scale score, as well as on each of the individual items. There were no significant sex differences. (see Table V.) *t* tests of significance of mean differences between Groups I and II, Groups II and III, and Groups I and III yielded highly significant results ($P<.001$) for all comparisons. The results of the *t* tests are shown in Table VI.

The parents of the average Group I subject speak Spanish to one another almost all of the time; the average

TABLE V

DOUBLE CLASSIFICATION ANALYSES OF VARIANCE

OF SEX BY ACCULTURATION GROUPS

FAMILY LANGUAGE USAGE SCALE

| Source | df | MS | F |
|---|---|---|---|
| Total Score | | | |
| Total | 127 | 14.29 | |
| Between | 5 | 343.85 | |
| Sex (A) | 1 | .46 | .59 |
| Acculturation (B) | 2 | 859.29 | 1095.57*** |
| A × B | 2 | .11 | .14 |
| Within | 122 | .78 | |
| Item 1 | | | |
| Total | 127 | 1.61 | |
| Between | 5 | 29.28 | |
| Sex (A) | 1 | .15 | .31 |
| Acculturation (B) | 2 | 72.52 | 154.04*** |
| A × B | 2 | .61 | 1.30 |
| Within | 122 | .47 | |
| Item 2 | | | |
| Total | 127 | 1.82 | |
| Between | 5 | 32.10 | |
| Sex (A) | 1 | .38 | .66 |
| Acculturation (B) | 2 | 79.83 | 137.52*** |
| A × B | 2 | .22 | .38 |
| Within | 122 | .58 | |
| Item 3 | | | |
| Total | 127 | 2.48 | |
| Between | 5 | 57.26 | |
| Sex (A) | 1 | .24 | 1.01 |
| Acculturation (B) | 2 | 142.97 | 607.19*** |
| A × B | 2 | .07 | .31 |
| Within | 122 | .24 | |

***p < .001

TABLE VI

t TESTS OF SIGNIFICANCE OF MEAN DIFFERENCES ON THE FAMILY LANGUAGE USAGE AND SOCIOECONOMIC SCALES BETWEEN GROUP I, GROUP II, AND GROUP III

| Variable | Comparisons | | |
|---|---|---|---|
| | Group I - Group II | Group I - Group III | Group II - Group III |
| Family Language Usage Scale | | | |
| Total Score | 22.66*** | 44.53*** | 25.66*** |
| Item 1 | 7.95*** | 16.67*** | 10.15*** |
| Item 2 | 7.95*** | 15.81*** | 9.06*** |
| Item 3 | 17.54*** | 33.25*** | 18.41*** |
| Socioeconomic Scale | | | |
| Total Score | 3.18** | 9.09*** | 6.74*** |
| Father's Education | 1.50 | 6.52*** | 5.64*** |
| Mother's Education | 3.44*** | 7.60*** | 4.72*** |
| Father's Job | 2.32* | 6.99*** | 5.29*** |

*P $\leq$ .05
**P $\leq$ .01
***P $\leq$ .001

subject speaks Spanish to his siblings most of the time; and he speaks Spanish to his parents almost all of the time. The parents of the average Group II subject speak Spanish to one another more than half of the time; the subject speaks Spanish to his siblings slightly less than half of the time; and he speaks Spanish to his parents about half of the time. The parents of the average Group III subject speak English to each other most of the time; the subject speaks English to his siblings almost all of the time; and he speaks English to his parents almost all of the time.

The differences between Group II and III tend to be very much larger than the differences between Groups I and II on both the achievement and personality measures, and are associated with the dominance of English language usage within the family as opposed to the dominance of Spanish or the equality of Spanish and English. The important factor appears to be the dominance of English. The sharp increase in Group III achievement and personality scores tends to support the Madsen (1964) assumption that acculturation among Mexican-Americans is a middle class phenomenon (i.e., acculturation does not occur until middle class status is reached).

SES. The three acculturation groups also differed at a highly significant level ($P<.0001$) on the total SES score as well as on the individual items, and again there were no significant sex differences. See Table VII for the results of the analyses of variance. *t* tests of significance of mean differences between all pairs of groups were carried out (Table VI). All *t*s were significant at the .001 level or better, except for the comparisons between Groups I and II on (a) father's education which failed to reach statistical significance, (b) father's job which was at the .05 level, and (c) total SES which was at the .01 level.

The father of the average Group I subject dropped out of school during the early part of seventh grade, and his mother dropped out before the end of sixth grade. His father's job has a value of 2 on the Warner Scale (Warner, Meeker, and Eells, 1949) which includes semi-skilled labor and lower level service occupations. The father of the average Group II subject dropped out of school during the eighth grade, and his mother dropped out at the beginning of ninth grade. His father's job has a value of 2.8 on the Warner Scale which includes skilled labor, radio repair, mechanics, and middle level

TABLE VII

DOUBLE CLASSIFICATION ANALYSES OF VARIANCE

OF SEX BY ACCULTURATION GROUPS

SOCIOECONOMIC SCALE

| Source | df | MS | F |
|---|---|---|---|
| Total Score | | | |
| Total | 127 | 12.70 | |
| Between | 5 | 143.07 | |
| Sex (A) | 1 | .07 | .01 |
| Acculturation (B) | 2 | 348.94 | 47.45*** |
| A × B | 2 | 8.70 | 1.18 |
| Within | 122 | 7.35 | |
| Father's Education | | | |
| Total | 127 | 2.13 | |
| Between | 5 | 16.72 | |
| Sex (A) | 1 | .00 | .00 |
| Acculturation (B) | 2 | 39.68 | 25.89*** |
| A × B | 2 | 2.12 | 1.38 |
| Within | 122 | 1.80 | |
| Mother's Education | | | |
| Total | 127 | 1.80 | |
| Between | 5 | 15.97 | |
| Sex (A) | 1 | 1.05 | .86 |
| Acculturation (B) | 2 | 39.19 | 32.04*** |
| A × B | 2 | .20 | .16 |
| Within | 122 | 1.22 | |
| Father's Job | | | |
| Total | 127 | 2.07 | |
| Between | 5 | 17.10 | |
| Sex (A) | 1 | .35 | .24 |
| Acculturation (B) | 2 | 41.03 | 28.20*** |
| A × B | 2 | 1.55 | 1.07 |
| Within | 122 | 1.46 | |

***p < .001

service occupations. The father of the average Group III subject dropped out of high school just before graduation, and his mother dropped out earlier during her senior year. His father's job has a value of 4.2 on the Warner Scale, which includes such occupations as salesman, factory foreman, and self-employed skilled labor.

Inspection of group differences on the total acculturation and total SES scores indicate that the two measures covary as assumed. SES is entirely parent-determined whereas the acculturation total is determined by both parents and child, with the child's usage of English higher at all levels.

Achievement Measures. There were highly significant acculturation main effects ($P<.001$) on the California Total scores and on the three California subtests. (See Table VIII.) The sex main effect did not reach significance on any of the California tests; however, it did approach significance on the California Total ($P=.13$). The acculturation groups differed at the .03 level on English grades, and at a better than .01 level on math grades. Sex differences were significant on English grades ($P=.0001$) and on math grades ($P=.003$), and the sex by acculturation interaction effect on math grades was significant at a better than .05 level.

TABLE VIII

DOUBLE CLASSIFICATION ANALYSES OF VARIANCE

OF SEX BY ACCULTURATION GROUPS

ACHIEVEMENT MEASURES

| Source | df | MS | F |
|---|---|---|---|
| California Total | | | |
| Total | 127 | 6061.35 | |
| Between | 5 | 49845.91 | |
| Sex (A) | 1 | 9788.78 | 2.29 |
| Acculturation (B) | 2 | 115890.47 | 27.16*** |
| A × B | 2 | 3829.93 | .90 |
| Within | 122 | 4266.90 | |
| California Reading | | | |
| Total | 127 | 7348.42 | |
| Between | 5 | 55999.11 | |
| Sex (A) | 1 | 473.65 | .09 |
| Acculturation (B) | 2 | 138218.49 | 25.81*** |
| A × B | 2 | 1542.45 | .29 |
| Within | 122 | 5354.54 | |
| California Arithmetic | | | |
| Total | 127 | 4974.83 | |
| Between | 5 | 31556.95 | |
| Sex (A) | 1 | 4529.27 | 1.17 |
| Acculturation (B) | 2 | 74385.39 | 19.14*** |
| A × B | 2 | 2242.35 | .58 |
| Within | 122 | 3885.40 | |
| California Study Skills | | | |
| Total | 127 | 7750.31 | |
| Between | 5 | 72709.15 | |
| Sex (A) | 1 | 2188.11 | .43 |
| Acculturation (B) | 2 | 175121.78 | 34.41*** |
| A × B | 2 | 5557.05 | 1.09 |
| Within | 122 | 5088.06 | |
| English Grade | | | |
| Total | 127 | 10.75 | |
| Between | 5 | 54.63 | |
| Sex (A) | 1 | 172.34 | 19.25*** |
| Acculturation (B) | 2 | 33.22 | 3.71* |
| A × B | 2 | 17.19 | 1.92 |
| Within | 122 | 8.95 | |
| Math Grade | | | |
| Total | 127 | 10.28 | |
| Between | 5 | 45.94 | |
| Sex (A) | 1 | 81.44 | 9.23** |
| Acculturation (B) | 2 | 44.73 | 5.07** |
| A × B | 2 | 29.40 | 3.33* |
| Within | 122 | 8.82 | |

*p ≤ .05
**p ≤ .01
***p ≤ .001

*t* tests of significance of mean differences between all possible pairs of acculturation groups were carried out, and all tests were significant at a better than .05 level, except for the differences between Groups I and II on English and math grades (Table IX).

*t* tests were also carried out on mean differences between males and females within acculturation groups. On English grades, girls were higher in Group II ($t$=4.67, $P<.001$). On math grades, girls were higher in Group II ($t$=3.78, $P<.01$) and also in Group III ($t$=2.12, $P<.05$).

The above results strongly support the assumption that achievement is positively related to acculturation. The average Group I subject achieved at the 5.6 grade level on the California Total, the average Group II subject at the 6.7 grade level, and the average Group III subject at the 8.5 grade level. The mean for the school district is 6.7 and for the sample as a whole 6.9. The average Group I and Group II subjects are making C in English and math, and the average Group III subject is making B- in English and C+ in math. The Group III teacher-assigned grades are consistent with standardized achievement test scores, but the Group I and II teacher-assigned grades are higher than is consistent with standardized achievement test scores. These findings agree

TABLE IX

t TESTS OF SIGNIFICANCE OF MEAN DIFFERENCES ON THE ACHIEVEMENT MEASURES BETWEEN GROUP I, GROUP II, AND GROUP III

| Variable | Comparisons | | |
|---|---|---|---|
| | Group I - Group II | Group I - Group III | Group II - Group III |
| California Total | 2.97** | 9.28*** | 4.61*** |
| California Reading | 2.26* | 6.69*** | 5.04*** |
| California Arithmetic | 3.47*** | 5.88*** | 2.88** |
| California Study Skills | 3.37** | 7.85*** | 5.17*** |
| English Grade | .04 | 2.26* | 2.44* |
| Math Grade | .10 | 2.67** | 2.85** |

*P ≤ .05
**P ≤ .01
***P ≤ .001

with those of Swartz (1967) and Anderson and Evans (1969) who found that the grades of Mexican-American students are biased upward. It should be noted that the majority of Group I subjects were drawn from Cooper and Tafolla where the mean grade equivalent scores on the California Total are 5.4 and 5.2 respectively; therefore, Group I subjects are slightly above average in the student populations to which they belong. Group II subjects scored over a year higher on the California Total than Group I subjects, but there is no difference in teacher-assigned grades. Group II subjects were drawn in almost equal numbers from Cooper and Tafolla and from Mann and Twain. The fact that Group II subjects who were drawn at Mann and Twain are compared with students who have a higher mean achievement level may explain their failure to obtain higher teacher-assigned grades than Group I. Achievement means on the California for Twain and Mann are 6.5 and 6.9 respectively.

Manual (1965) reported several studies of achievement among Mexican-American children which are consistent with the generally accepted view that Mexican-American children achieve at a somewhat lower level than Anglos and that the discrepancy between the groups is twice as

large for reading as for arithmetic. Current findings indicate that there was no difference between reading and arithmetic scores on the California Tests for the sample as a whole. Group I achieved .1 of a year higher in arithmetic, Group II .4 of a year higher in arithmetic, and Group III .8 of a year higher in reading. All three groups earned higher English than math grades. Overall, differences in the present data tend to be in the opposite direction from those reported by Manual.

Personality Measures. It was predicted that Group I would score lowest and Group III highest on all personality measures, and that Group II would be more similar to Group III on internal control and more similar to Group I on self-concept of ability and achievement motivation. It was also predicted that Group III boys would score higher than Group III girls on independence training, self-concept of ability, and achievement motivation. Results of the double classification analyses of variance are set forth in Table I, and *t* tests of the significance of mean differences are shown in Table II.

On the locus of control measure, neither the sex or acculturation main effects, nor the interaction effect reached significance.

On the total independence training measure, the acculturation main effect was significant at the .0004 level, but the sex main effect failed to reach statistical significance. *t* tests revealed that the difference between Groups I and II failed to reach significance, but the difference between Groups II and III was significant at the .01 level, and the difference between Groups I and III was significant at the .001 level.

On the self-concept measure, the acculturation main effect was significant at the .004 level, but the sex main effect failed to reach significance. The sex by acculturation interaction effect also failed to reach significance. The difference between Groups I and II failed to reach significance on a *t* test, but the differences between Groups II and III and between Groups I and III were significant at the .01 level.

On the achievement motivation measure, the sex main effect was highly significant ($P<.01$), and the sex by acculturation interaction effect was significant at the .03 level. The acculturation main effect failed to reach statistical significance. The sex main effect and the sex by acculturation interaction effect appear due mainly to the high Group III male mean, and a *t* test of

the difference between Group III males and females was significant at the .001 level.

In general, the results indicate that the differences between acculturation groups were in the direction predicted; however, the acculturation main effects on locus of control and achievement motivation failed to reach significance.

The differences between Groups I and II are very small on all of the personality measures, none reaching significance. Subjects scoring 5 on the Family Language Usage Scale were dropped from Group II in an effort to increase the differentiation between Groups I and II; however, separate one-way analyses of variance run for males and females revealed that Group II means were not changed appreciably, nor in a consistent direction, by eliminating level 5 subjects. This suggests that either (a) the Family Language Usage measure was successful in discriminating only two distinct personality groups based on dominance and nondominance of English, or (b) that some crucial personality dimension was omitted.

Sex effects obscured acculturation main effects on both locus of control and achievement motivation; however, the locus of control measure did not achieve the

expected level of differentiation between acculturation groups, even for male groups considered separately. The reason for this failure is not known. It may be related to the setting in which the three acculturation groups are functioning and to the position of the individual in the particular hierarchy to which he belongs. Group II subjects, both boys and girls, are more variable on this measure than either Group I or III subjects, and it will be remembered that Group II subjects were drawn from different types of schools whereas Group I was drawn predominantly from low acculturation, low SES schools and Group III from higher acculturation, higher SES schools.

Hersch and Scheibe (1967) reported some evidence of an association between Rotter's Internal-External Scale and intelligence, and Bialer (1961) established a correlation of .56 between mental age and the locus of control measure used herein. Possibly by eliminating students with IQs below 80, the more external students were eliminated, 22 percent of the Tafolla and Cooper students were eliminated because of low IQ; whereas only 6 percent of the Mann and Twain students were eliminated for this reason; therefore, Group I was selectively altered to a greater extent than either Group II or III, and Group II was altered more than Group III. Hersch and Scheibe (1967) suggested

that an individual may be external because he is intellectually weak in relation to those around him. The achievement level of Group I subjects is above the mean of the schools which they attend so that, in essence, this factor has been eliminated.

Father absence also accounted for the elimination of a larger percentage of potential subjects from Group I than from the other two groups. Thus, it appears that Group I occupies a relatively more advantageous position with respect to reference groups on this factor than do the other groups. Relative position with respect to reference group may be an important dimension in determining the extent to which an individual feels that he is in control of the environment.

Unfortunately there are no published means for the locus of control measure because it has been used only to establish relationships with other variables for normal and mentally retarded populations over wide age ranges. Crandall, Katkovsky, and Crandall (1965) reported means for 68 eighth grade boys and 93 eighth grade girls on their 34 item Intellectual Achievement Questionnaire (IAR), a locus of control measure specific to academic and intellectual achievement. The boys averaged 74.7%

(range 15-32) internal responses, the girls 78.4% (range 13-34), and the sample as a whole 77.4% (range 13-34). In the present study, on the Bialer instrument, the boys averaged 61.8% (range 8-20) internal responses, the girls 60.3% (range 6-21), and the sample as a whole 61.1% (range 6-21). Although the Crandall, et al, questionnaire and the Bialer scale are not strictly comparable, the results indicate that the Mexican-American sample of the current study, as a whole, is probably less internal than Crandall's, et al, eighth grade Anglo sample. This is consistent with Graves' (1961) finding that Spanish-Americans were more external than Anglos, even with SES controlled.

Elder (1962) established cutting points on the mother's and father's independence training scales using data from 12,500, seventh through twelfth grade Anglo subjects representing a wide SES range. Cutting points were the same for mothers and fathers, and three independence training groups were described: low, intermediate, and high. Parents low on independence training appeared autocratic, seldom explaining or using reasoning, and had not reduced their control over the past three years. High parents were opposite in all respects. Compared to Elder's Anglo parents, Group I and II mothers and fathers

fall within the intermediate range. Group III fathers also fall within the intermediate range, but Group III mothers fall at the lower end of the high range. For the total sample, 5.5% of the parents were low, 65.5% were intermediate, and 29% were high on independence training. This finding is contrary to the assumption of this study, based on cultural analysis, that Mexican-American parents are authoritarian. It is also contrary to the conclusion of Grebler, Moore, and Guzman (1970) that Mexican-American parents at all levels of acculturation are more authoritarian than Anglo parents; however, the Grebler, et al, data were generated by asking parents what practices should be, and there may be a discrepancy between the ideal parent-child relationship described by the parents and the actual one. It may also be that the unexpectedly high level of independence training results, to some extent, from the effects of selection: in eliminating the less competent children, the less competent parents may also have been eliminated, and it would be anticipated that more competent parents would be higher on independence training. In view of available data, explanations must be considered speculative at this point.

As discussed in relation to achievement and locus of control, the school setting appears to influence

self-concept of ability. Although Group II achieved significantly higher than Group I on achievement tests, the difference in self-concept is minimal. The slightly above average self-concept reported by Group I appears inconsistent with their 5.6 grade equivalent achievement level; however, when the 5.2 and 5.4 grade equivalent achievement levels of their reference groups are taken into consideration, their self-appraisal is realistic. The average Group I grades (Cs) indicate that teachers also perceive Group I students as average. For each acculturation group, the difference between the group achievement mean and the school achievement mean is reflected in the group self-concept mean: the larger the positive discrepancy, the higher the self-concept of ability. It appears, therefore, that reported self-concepts are reasonable if children are comparing themselves with classmates.

Although the acculturation effect on achievement motivation did not emerge due to differences between the sexes, differences between the current Mexican-American sample and an Anglo sample can be demonstrated. Read and Spilka (1969) administered the achievement motivation measure to 247 urban Anglo, ninth and tenth

grade children, divided into low, normal, and high-achieving groups. Since no mention is made of the sex of their subjects, it is assumed that they were both male and female. A constant of 60 was added to the raw scores yielding means as follows: (a) low achieving, 104.2; (b) normal, 106.6; and (c) high-achieving, 115.1. The difference between the high and normal groups was significant at the .01 level (Duncan's Multiple Range Test), but the difference between the normal and low groups failed to reach significance. Adding the same constant to the means of the groups in the current study yields the following means: (a) Group I, 100.1; (b) Group II, 99.8; (c) Group III, 104.0; and (d) total sample, 101.4. The Group III mean is almost identical to the mean of the low-achieving Anglo group; however, Group III has a mean IQ of 105.3 as contrasted with the Anglo mean of 98.6, and a grade point average of 2.6 as contrasted with the Anglo average of 1.8. The Mexican-American Group III falls between Read and Spilka's low and normal achieving groups on IQ and between their normal and high achieving groups on grade point average. Compared to the Anglo subjects, the high-acculturated Mexican-American children's achievement motivation is low in relation to both their ability

and achievement. These relationships also hold true for the Mexican-American sample as a whole. This finding is consistent with the assumption of this study based on cultural analysis and with the findings of Saunders (1954), Kluckhohn and Strodtbeck (1961), Demos (1962), and Manual (1965) which indicate that Anglos demonstrate a higher need for achievement than Mexican-Americans.

Sex Differences. Important sex differences were found with respect to both achievement and personality variables. Certain of the differences between acculturation groups are meaningless unless the comparisons are sex specific.

Current results indicate that girls make significantly higher grades than boys, and this finding is in agreement with the Garai and Scheinfeld (1968) findings. Although sex differences in achievement did not reach statistical significance on any of the California Tests, all differences were in favor of the girls. This is in opposition to the Garai and Scheinfeld finding within the American population that boys score higher on scholastic achievement tests. Maccoby (1966) also reported this difference. Mean IQs computed for boys and girls differ by less than one IQ point so that ability does not

appear to be a factor in the achievement test differences. A check of the school records revealed an approximately equal number of boys and girls enrolled in all eighth grade classes sampled so that dropout does not appear to have selectively altered motivational factors in male or female groups. It may be that the Grebler, Moore, and Guzman (1970) finding that Mexican-American girls receive more responsibility training than boys is a factor. If this is true, a separate measure of achievement via conformance, in addition to the present achievement motivation measure, might define sex differences in motivation associated with achievement.

Inspection of the sex by acculturation group means (Table III, Appendix B) for locus of control and achievement motivation reveal that the trends of the male and female means are in opposite directions. Mexican-American boys tend to become more internal as acculturation increases, and to develop higher achievement motivation. This is not true for girls. Separate one-way analyses of variance for boys and girls (Table III) indicate that the difference between male acculturation groups on locus of control approached significance at the .08 level and that the difference on achievement

motivation was significant at the .03 level. *t* tests of the significance of mean differences between groups, shown in Table IV, reveal that male Groups II and III and Groups I and III differ at the .05 level on achievement motivation, but the difference between Groups I and II failed to reach significance. The female acculturation groups did not differ significantly on locus of control or on achievement motivation. Group III boys and girls differed at the .001 level of significance on achievement motivation. The significant sex difference in favor of males is consistent with the findings of Adams and Sarason (1963) and McGuire (1961) in Anglo populations.

Other sex differences found within Anglo populations indicate that factors underlying achievement are sex specific and tend to support the use of an achievement via conformance measure. Maccoby (1966), in her review of research on sex differences, reported studies which indicate that females are more conforming than males and show greater acceptance of school standards. The results of another study reported indicates that need for achievement in females is aroused by social reward, and in males by academic competition. Holland (1959) reported a highly significant correlation between the achievement via conformance scale of the California Personality Inventory

and grade point average among high school girls. Mitchell and Pierce-Jones (1960) factor analyzed the CPI scores of a sample of college students and found that the achievement via conformance scale loaded heaviest on a factor they named adjustment by social conformity. Gill and Spilka (1962) reported CPI results for a low SES, Mexican-American sample. Achieving girls scored significantly higher on the achievement via conformance scale than achieving boys or underachieving boys or girls. They also reported that all groups scored relatively low on the achievement via independence scale. Overall, evidence supports the notion that achievement via conformance may be a more adequate measure of the motivation underlying achievement among girls; whereas the measure used in the study, which stresses ambition and high goals, has proved to be a better measure for boys.

Overall, sex differences on independence training are negligible, and the present data do not support the Anderson and Evans (1969) finding that Mexican-American fathers are more democratic with daughters than with sons. Although boys and girls received approximately equal amounts of independence training, mothers and fathers do not give equal amounts. Consistent with Elder's finding

that mothers in his sample were more likely to be high on independence training than fathers, the mothers' mean in the current study is 3.24 and the fathers' mean is 2.91.

On self-concept of ability, boys scored higher than girls, but the difference did not reach statistical significance. Girls actually achieve at a higher level academically than boys, but perceive themselves as less able. This is consistent with Wylie's (1963) finding in an Anglo population that girls make more modest estimates of their ability than boys.

The hypothesis that Group III boys would score higher than Group III girls on independence training, self-concept of ability, and achievement motivation received support in that the differences were all in the predicted direction; however, only the difference on achievement motivation reached statistical significance.

Hypothesis II. The hypothesis that the four personality measures (components of coping style) would add to the prediction of achievement received support. Prediction equations using the four personality measures and sex to predict the various achievement criteria all resulted in multiple Rs that were significant at the .001

level or better (Table X). Separate analyses by sex revealed important differences in value of the predictors for males and females (Tables XI and XII); however, self-concept of ability was the most powerful predictor for all criteria for both sexes.

## Discussion

Correlation matrices for the sample as a whole (Table VI), and for males (Table VII) and females (Table VIII) separately are included in Appendix B for reference.

Table X lists the beta weight and validity coefficient of each predictor for each criterion and the multiple R obtained for each criterion. The beta weights are included so that the present findings may be compared to those of other studies investigating the same or similar variables; however, the characteristics of beta weights for correlated predictor variables render the interpretation of beta squares as the amount of variance accounted for questionable. Darlington (1969) demonstrated that beta weights change as variables are added to or eliminated from regression equations and can even change in sign.

The largest multiple R (.60) was obtained for English grades, and the lowest (.47) for math grades and

TABLE X

LINEAR REGRESSION ANALYSES

TOTAL SAMPLE

| Criterion | Predictors | | | | | | | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sex | | Locus | | Ind. Trng. | | Self-Conc. | | Ach. Mot. | | | | |
| | β | Val. | β | Val. | β | Val. | β | Val. | β | Val. | | | |
| Cal. Total | -.18 | -.13 | .16 | .24 | .11 | .27 | .45 | .48 | -.01 | .21 | .55 | .30 | 13.18*** |
| Cal. Reading | -.09 | -.02 | .22 | .32 | .11 | .28 | .40 | .49 | .06 | .29 | .56 | .32 | 14.09*** |
| Cal. Arithmetic | -.13 | -.09 | .11 | .18 | .13 | .25 | .40 | .42 | -.05 | .14 | .47 | .24 | 8.73*** |
| Cal. Study Skills | -.07 | -.05 | .11 | .19 | .16 | .28 | .46 | .46 | -.14 | .10 | .52 | .26 | 10.83*** |
| English Grade | -.44 | -.38 | .01 | .09 | .10 | .25 | .37 | .40 | .12 | .20 | .60 | .36 | 18.14*** |
| Math Grade | -.30 | -.28 | -.15 | -.11 | .05 | .12 | .37 | .30 | -.06 | .02 | .47 | .22 | 8.79*** |

***p ≤ .001

TABLE XI

LINEAR REGRESSION ANALYSES

MALES

| Criterion | Predictors | | | | | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Locus | | Ind. Trng. | | Self-Conc. | | Ach. Mot. | | | | |
| | β - | Val. | β | Val. | β | Val. | β | Val. | | | |
| Cal. Total | .23 | .44 | -.03 | .27 | .44 | .58 | .21 | .42 | .66 | .44 | 14.67*** |
| Cal. Reading | .29 | .49 | -.00 | .30 | .36 | .53 | .25 | .46 | .67 | .45 | 15.31*** |
| Cal. Arithmetic | .20 | .39 | -.07 | .21 | .48 | .57 | .16 | .35 | .62 | .39 | 11.81*** |
| Cal. Study Skills | .18 | .33 | .05 | .26 | .43 | .51 | .01 | .23 | .54 | .30 | 8.00*** |
| English Grade | .02 | .26 | -.01 | .26 | .48 | .57 | .26 | .42 | .62 | .38 | 11.52*** |
| Math Grade | -.22 | -.05 | .13 | .22 | .37 | .36 | .05 | .15 | .42 | .18 | 4.11* |

*p ≤ .05
**p ≤ .01
***p ≤ .001

TABLE XII

LINEAR REGRESSION ANALYSES

FEMALES

| Criterion | Predictors | | | | | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Locus | | Ind. Trng. | | Self-Conc. | | Ach. Mot. | | | | |
| | β | Val. | β | Val. | β | Val. | β | Val. | | | |
| Cal. Total | .07 | .08 | .19 | .27 | .53 | .43 | -.27 | .05 | .52 | .27 | 7.89*** |
| Cal. Reading | .13 | .14 | .18 | .27 | .52 | .45 | -.20 | .11 | .52 | .28 | 8.23*** |
| Cal. Arithmetic | .01 | .03 | .24 | .28 | .40 | .32 | -.26 | -.00 | .44 | .20 | 5.36** |
| Cal. Study Skills | .05 | .06 | .23 | .29 | .54 | .42 | -.33 | -.00 | .54 | .29 | 8.71*** |
| English Grade | -.07 | -.05 | .21 | .27 | .35 | .37 | -.05 | .17 | .43 | .18 | 4.69** |
| Math Grade | -.13 | -.14 | -.01 | .03 | .45 | .34 | -.21 | .02 | .41 | .17 | 4.39** |

*P ≤ .05
**P ≤ .01
***P ≤ .001

California Arithmetic scores. The multiple Rs obtained for the various California Tests ranged from .47 to .56, with R=.55 for Total scores and .56 for Reading scores. Interpreting the multiple $R^2$ as the proportion of variance accounted for, the personality measures in combination with sex were successful in predicting between 22% and 36% of the total variance in achievement scores.

Inspection of the single and multiple correlations in Table X indicates that self-concept of ability is the single most powerful predictor. Self-concept by itself accounts for between 16% and 24% of the total variance in the California Test scores, and between 9% and 20% of the total variance in grades. Sex is important only in the prediction of grades and enters into the prediction equation with a negative weight indicating that girls make higher grades than boys.

Anderson and Johnson (1971) predicted English grades for a Mexican-American population using self-concept of ability, sex, father's education, family language usage, and several measures of parental stress on various educational goals. They also predicted math grades using self-concept, parental stress on academic achievement, student's desire to achieve, and parental stress to attend college. As in the current study, self-concept of ability

was the most significant predictor for both English and math grades. Coleman, et al., (1966), also reported that self-concept with regard to learning and sense of environmental control related more strongly to achievement than any other variables in their study.

Theoretical analysis and research evidence suggested that locus of control might be the crucial component of coping style; however, in the current sample this has not proved to be true. As discussed earlier, the effects of selection may have been to restrict the range on this variable and thereby reduce its predictive power. Another important factor is demonstrated by separate analyses by sex: the relationships between personality variables and achievement are different for males and females.

Sex Differences. The separate analyses for males are set forth in Table XI and for females in Table XII. Inspection of the multiple Rs in the two tables reveals that the personality measures predict a greater proportion of the variance in male achievement scores than in female scores.

Self-concept of ability is the most important predictor for both males and females. Among males, both single and multiple correlations indicate that locus of

control enters as the second most important predictor and achievement motivation as the third. The contribution of independence training was relatively unimportant. Among girls, independence training is the second most important predictor and the contributions of locus of control and achievement motivation are negligible; however, the actual contribution of independence in comparison to that of self-concept of ability is small.

Although there are some inconsistencies, the majority of studies involving locus of control measures show no sex differences on the variable (Battle and Rotter, 1963). Crandall, et al., (1965) in predominantly white samples, found locus of control predictive of California Achievement Test scores for both males and females in elementary school, but not for males or females in grades six through twelve. Coleman, et al., (1966) found locus of control to be predictive of achievement test scores among black children at all grade levels. The current Mexican-American sample differs from both black and white groups in that locus of control predicted male achievement, but not female achievement.

Anderson and Evans (1969) reported that independence training and self-concept of ability were the best

predictors of achievement among Mexican-Americans; whereas only self-concept had high predictive value among Anglos. They hypothesized that the Anglos in their sample had a sufficient degree of independence training to nullify it as a predictor. The fact that the majority of the parents in the current study fell within the intermediate range on independence training suggests that the Anderson and Evans hypothesis also applies to the present Mexican-American sample. Inspection of the correlations between achievement and the various personality measures for males (Table VII, Appendix B) and for females (Table VIII, Appendix B) indicates that the relationships between independence and achievement are similar for males and females, but the higher correlations of locus of control and achievement motivation with achievement among males renders the correlation between independence and achievement relatively less important for males.

Most research on achievement motivation has been within male groups (Lavin, 1965), and findings with respect to females have been inconsistent (Brown, 1965). Within the current sample, achievement motivation is predictive of achievement among males, but not

among females. As suggested previously, a separate measure of achievement via conformance might improve prediction among females. Supporting this suggestion is the fact that locus of control is predictive of male achievement, but not female achievement, and, theoretically, internal control is a necessary precondition for achievement motivation, but not for conformity.

Overall, the personality measures were better predictors of male achievement, and male performance on the measures more closely approximated the predictions of the study. Among males, locus of control, self-concept of ability, and achievement motivation all contributed substantially to the prediction of achievement so that it might be said that an active coping style is predictive of high achievement. Among girls, lesser amounts of variance in achievement were predicted, and only self-concept of ability entered as a substantial predictor. The results do not justify any statement regarding the relationship between overall coping style and achievement among girls.

Hypothesis III. The prediction that SES and acculturation, although correlated, would contribute significant separate variance to the four personality measures and to achievement received partial support. Both SES

and acculturation contributed significant separate variance to the California Achievement Tests and independence training. SES contributed significant separate variance to English grades, locus of control, and self-concept of ability, but acculturation did not (Table XIII).

## Discussion

Table XIII sets forth the beta weights and validities for acculturation and SES for each criterion, and the multiple R obtained for each criterion. The multiple Rs for the various California tests were all significant at the .001 level or better. The multiple Rs for the teacher-assigned grades were significant at the .01 level, as were the Rs for locus of control and self-concept of ability. The multiple R for independence training was significant at the .001 level. The only multiple R that failed to reach statistical significance was the one obtained for achievement motivation.

The prediction of the California Total scores resulted in a multiple $R^2$ of .35 which may be interpreted to mean that acculturation and SES, in combination, predicted 35% of the total variance in scores. The independent contribution of acculturation can be calculated by

TABLE XIII

LINEAR REGRESSION ANALYSES

TOTAL SAMPLE

| Criterion | Predictors | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|
| | Acculturation | | SES | | | | |
| | β | Val. | β | Val. | | | |
| Cal. Total | .26 | .50 | .40 | .56 | .59 | .35 | 67.22*** |
| Cal. Reading | .24 | .48 | .39 | .54 | .57 | .32 | 60.13*** |
| Cal. Arithmetic | .18 | .43 | .41 | .52 | .54 | .29 | 52.22*** |
| Cal. Study Skills | .30 | .56 | .43 | .61 | .65 | .43 | 95.22*** |
| English Grade | -.02 | .15 | .27 | .26 | .26 | .07 | 9.49** |
| Math Grade | .16 | .22 | .09 | .19 | .23 | .05 | 6.85** |
| Locus of Control | -.00 | .16 | .26 | .26 | .26 | .07 | 9.18** |
| Independence Training | .20 | .33 | .21 | .33 | .37 | .14 | 20.15*** |
| Self-Concept of Ability | .12 | .23 | .19 | .26 | .28 | .08 | 10.50** |
| Achievement Motivation | .12 | .09 | -.05 | .02 | .10 | .01 | 1.27 |

**p ≤ .01
***p ≤ .001

subtracting the square of the correlation between SES and the California Total from the multiple $R^2$ and, similarly, the independent contribution of SES can be determined by deducting the square of the correlation between acculturation and the California Total. Calculated in this manner, acculturation accounts for 5% of the total variance in California Total scores and SES accounts for 10%. The two predictors in combination make a joint contribution of 20%. On independence training, acculturation and SES each contribute 3% and the joint contribution is 8%.

For the total sample, SES was a more powerful predictor than acculturation for both the achievement and personality measures; however, the substantial joint contribution in each case, over and above the unique contributions of the two predictors, establish that there is considerable overlap in the predictive ability of the two variables. Even with respect to those measures for which the independent contribution of acculturation was negligible, the joint contribution was substantial.

Sex Differences. Separate analyses for males (Table XIV) and for females (Table XV) indicate that

TABLE XIV

LINEAR REGRESSION ANALYSES

MALES

| Criterion | Predictors | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|
| | Acculturation | | SES | | | | |
| | β | Val. | β | Val. | | | |
| Cal. Total | .23 | .43 | .36 | .49 | .53 | .28 | 22.58*** |
| Cal. Reading | .23 | .40 | .30 | .43 | .47 | .22 | 16.42*** |
| Cal. Arithmetic | .20 | .42 | .40 | .51 | .54 | .29 | 23.77*** |
| Cal. Study Skills | .23 | .45 | .40 | .52 | .56 | .31 | 26.05*** |
| English Grade | .10 | .17 | .13 | .19 | .20 | .04 | 2.41 |
| Math Grade | .11 | .11 | -.00 | .06 | .11 | .01 | .59 |
| Locus of Control | .05 | .26 | .37 | .40 | .40 | .16 | 11.03** |
| Independence Training | .30 | .37 | .13 | .29 | .39 | .15 | 10.20** |
| Self-Concept of Ability | .11 | .22 | .21 | .27 | .28 | .08 | 5.03* |
| Achievement Motivation | .28 | .26 | -.03 | .13 | .26 | .07 | 4.38* |

*P ≤ .05
**P ≤ .01
***P ≤ .001

TABLE XV

LINEAR REGRESSION ANALYSES

FEMALES

| Criterion | Predictors: Acculturation β | Acculturation Val. | SES β | SES Val. | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|
| Cal. Total | .28 | .56 | .43 | .63 | .65 | .42 | 47.73*** |
| Cal. Reading | .24 | .55 | .47 | .63 | .66 | .43 | 50.00*** |
| Cal. Arithmetic | .17 | .45 | .42 | .53 | .55 | .30 | 28.30*** |
| Cal. Study Skills | .36 | .66 | .45 | .69 | .74 | .55 | 80.88*** |
| English Grade | -.20 | .15 | .54 | .41 | .44 | .19 | 15.45*** |
| Math Grade | .22 | .32 | .16 | .30 | .35 | .12 | 9.02** |
| Locus of Control | -.06 | .06 | .19 | .15 | .16 | .02 | 1.35 |
| Independence Training | .10 | .30 | .30 | .36 | .37 | .14 | 10.77** |
| Self-Concept of Ability | .14 | .25 | .17 | .26 | .28 | .08 | 5.76* |
| Achievement Motivation | -.07 | -.09 | -.04 | -.08 | .10 | .01 | .67 |

*p ≤ .05
**p ≤ .01
***p ≤ .001

acculturation and SES predict highly significant amounts of variance (P .001) in all California Tests for both sexes. The multiple Rs obtained for girls' English grades (P<.001) and math grades (P<.01) were highly significant, but the multiple Rs for boys' English and math grades failed to reach statistical significance. Among males, the multiple Rs obtained for locus of control and independence training were significant at the .01 level or better, and the multiple Rs for self-concept of ability and achievement motivation were significant at the .05 level or better. Among girls, only the multiple Rs obtained for independence training (P<.01) and for self-concept of ability (P<.05) reached significance.

Acculturation and SES predict a greater proportion of variance in female achievement scores than in male achievement scores; however, the two variables are better predictors of personality measures among boys than among girls. Among girls, the independent contribution of acculturation to the variance in California scores ranged from 2% to 9%, and the independent contribution of SES ranged from 10% to 13%. Among boys, the independent contribution of acculturation to the variance in California scores ranged from 3% to 4%, and the independent contribution of SES ranged from 6% to 11%. Among girls,

acculturation and SES did not predict a significant amount of variance in either locus of control or achievement motivation. Acculturation accounted for 1% of the variance in both independence training and self-concept of ability, and SES accounted for 5% and 2% respectively. Among boys, SES accounted for 11% of the variance in locus of control and 3% in self-concept of ability, with negligible contributions by acculturation. The relative importance of the predictors was reversed for independence and achievement motivation with acculturation predicting 7% and 5% respectively and SES contributing negligible amounts.

Hypothesis IV. Exploration of the relationships between mother's and father's independence training and achievement among boys and girls separately revealed that the two predictors, in combination, predicted approximately the same amounts of variance in achievement scores for boys and girls (Table XVI). Mother's independence training and father's independence training contributed about equally to boys' achievement. Among girls, mother's independence training contributed more to California Reading scores and English grades, and father's independence training more to California Arithmetic scores. For all criteria, except male California Arithmetic scores and male

TABLE XVI

LINEAR REGRESSION ANALYSES

SEPARATELY BY SEX

| Criterion | Predictors | | | | R | $R^2$ | F |
|---|---|---|---|---|---|---|---|
| | Moth. Ind. | | Fath. Ind. | | | | |
| | β | Val. | β | Val. | | | |
| Male | | | | | | | |
| Cal. Total | .15 | .21 | .18 | .23 | .27 | .07 | 4.39* |
| Cal. Reading | .19 | .25 | .17 | .24 | .30 | .09 | 5.00* |
| Cal. Arithmetic | .03 | .11 | .22 | .23 | .23 | .05 | 3.31 |
| Cal. Study Skills | .17 | .22 | .15 | .21 | .26 | .07 | 4.31* |
| English Grade | .16 | .22 | .15 | .21 | .26 | .07 | 4.19* |
| Math Grade | .08 | .15 | .18 | .21 | .22 | .05 | 3.02 |
| Female | | | | | | | |
| Cal. Total | .17 | .23 | .15 | .22 | .27 | .07 | 5.00* |
| Cal. Reading | .24 | .27 | .08 | .17 | .28 | .08 | 5.57* |
| Cal. Math | .10 | .19 | .24 | .28 | .29 | .08 | 6.07* |
| Cal. Study Skills | .21 | .26 | .13 | .21 | .29 | .08 | 5.93* |
| English Grade | .27 | .29 | .05 | .16 | .30 | .09 | 6.21* |
| Math Grade | -.04 | -.01 | .08 | .06 | .07 | .01 | .33 |

*P ≤ .05

and female math grades, the amount of variance predicted by the two independence measures was significantly greater than zero.

## Discussion

The multiple $R^2$s obtained for male achievement criteria ranged from .05 to .09, indicating that mother's and father's independence training together accounted for between 5% and 9% of the total variance in achievement criteria. Among girls, the two predictors accounted for 1% to 9% of the total variance in achievement criteria. All multiple Rs that reached significance were significant at the .05 level or better.

Although mother's and father's independence training are of approximately equal importance in the prediction of achievement among boys, inspection of the male correlation table (Table VII, Appendix B) shows that father's independence training correlates significantly with locus of control, self-concept of ability, and achievement motivation; whereas none of the correlations between mother's independence training and these three personality measures reached significance. As discussed earlier, the three personality measures

contribute significantly to the prediction of male achievement. Among girls, none of the correlations between mother's or father's independence training and the other personality variables reached significance (Table VIII, Appendix B).

Young (1957) found that independence training and need for achievement varied directly. In the current study, for the sample as a whole, these two variables also correlated at a significant level; however, separate analyses by sex (Tables VII and VIII, Appendix B) reveal that the correlation between total independence training and achievement motivation is due mainly to a strong correlation between father's independence training and achievement motivation among boys ($r=.35$, $P<.01$).

## SUMMARY AND IMPLICATIONS

### Summary

The sample of this study, as a whole, appears less internal and lower on achievement motivation than comparable samples of Anglo children, but similar in regard to independence training and self-concept of ability. The findings with respect to locus of control and achievement motivation are consistent with previously cited

studies, but the independence training and self-concept of ability results are contrary to what has been found in other investigations. An explanation of the divergent results in terms of the relatively advantageous position of study subjects in relation to reference groups has been suggested.

Scores on the four personality measures and the achievement measures all increased with acculturation as predicted; however, acculturation group differences on locus of control and achievement motivation were obscured to some extent by sex differences. Sex differences added greatly to the complexity of the data, and required that all analyses be carried out separately by sex, as well as for the sample as a whole, in order to define sex-specific relationships. The high-acculturation Group III boys scored higher on independence training, self-concept of ability, and achievement motivation than Group III girls as predicted.

The four personality measures (components of coping style) in combination with sex predicted highly significant amounts of variance in all of the achievement criteria; however, not all measures contributed significant separate variance. Patterns of significant elements

of coping style differ for boys and girls. Overall, the assumption that an active coping style is related to high achievement in school received more support from male results than from female results. Self-concept of ability emerged as the most powerful predictor for the sample as a whole, as well as for boys and girls separately. The personality measures predicted greater amounts of variance in achievement among boys than among girls, and several relationships within the data, as well as research evidence, suggested that prediction of female achievement might be increased by use of an achievement via conformance measure.

Acculturation and SES in combination predicted significant amounts of variance in all of the achievement criteria and all of the personality criteria except achievement motivation. Both predictors contributed significant separate variance to the California Achievement Tests and independence training. SES contributed significant separate variance to English grades, locus of control, and self-concept of ability, but acculturation did not. In all cases, even in those cases in which acculturation failed to make a significant unique contribution, the joint contribution was substantial

which indicates that there is considerable overlap in the predictive ability of the two variables. Separate analyses by sex revealed that acculturation and SES predicted greater amounts of variance in achievement among girls than among boys, but greater amounts of variance in the personality measures among boys than among girls. Overall, SES was a more powerful predictor than acculturation.

Research evidence suggested that mother's independence training might be a more powerful predictor of achievement than father's independence training and that the effects might be different for boys and girls. Analysis of the data revealed that the two measures accounted for significant amounts of variance in most achievement criteria for both sexes; however, among boys, the contributions of the two predictors were approximately equal. Among girls, mother's independence training was the more important predictor for California Reading scores and English grades; whereas father's independence training was the more important predictor for California Arithmetic scores. The question remains unclear because of the low variance in scores.

## Implications

Further Research. The current study was conceptualized in terms of personality variables that have been found to correlate with achievement in American schools; however, much of the research that established those correlations was done on male groups or undifferentiated mixed groups. The significant sex differences found in the current data, as well as in other recent investigations, emphasize the need to make analyses and predictions sex specific in educational research. Further research is needed to define the personality correlates of achievement among females, and the present data suggests achievement via conformance as a potentially important predictor of female achievement. A future study should include such a measure.

Although the focus of the study was on personality measurement at various levels of acculturation and on the relationships between the various personality variables and achievement within the Mexican-American sample, it is believed that the study would have been strengthened if an Anglo sample had been collected from the two higher acculturation, higher SES schools. Because of the unknown effects of uncontrolled school variables, it is possible that Anglo groups referred to earlier

and used in comparisons differed from the Mexican-American sample in important ways other than ethnicity.

The original design included three schools, one of which has an upper middle class population with an Anglo majority. The loss of that school for sampling resulted in a restriction in range of both SES and acculturation and may account for the failure to find more significant relationships in the data.

The current data established the importance of the influence of the reference group on self-perception of ability. At all levels of acculturation, self-concept of ability was realistic in relation to the reference group. A description of the reference group should be included with self-concept findings.

Eighth grade was selected for sampling because it was believed that the high dropout rate between ninth and tenth grade might have resulted in the modification of older samples in significant ways; however, current results indicate that the selection criteria have probably operated to eliminate students with the highest dropout potential (i.e., those with IQs below 80 and with absent fathers) so that high school samples probably would not differ appreciably from the junior high school samples

selected. The advantages of using older subjects include a higher reading level and the availability of a wider choice of suitable measures.

Educational Implications. The purpose of this study was to gain empirical knowledge about the relationships between personality and achievement within a Mexican-American school population as a base to determine appropriate strategies to improve the academic and social adjustment of Mexican-American school children.

The data indicate that SES is a more important factor than culture in predicting achievement, but that culture does predict some independent variance. This implies that the educational problems of Mexican-American children are similar to those of other low SES children, only relatively more intense, and that educational programs designed for low SES Anglo children would, in general, be appropriate for low SES Mexican-American children.

Although a discussion of the cognitive aspects of such programs is beyond the scope of this study, the interaction of cognitive and personal elements of development requires that cognitive factors be taken into account to the extent of specifying a need to provide

preschool opportunities for low SES children to acquire the cognitive skills possessed by middle class children of beginning school age and implicitly assumed by the first grade curriculum. Language development is an important component of the preschool curriculum for all low SES children, but especially for children with a language difference. Whether education should be bilingual or in English only is not a simple question because of the personal values involved; however, it is pointed out that acculturation (defined as the extent to which English is spoken) does make a unique contribution to the variance in achievement test scores. The difference in achievement was smaller between Groups I and II (Spanish-dominant and Spanish-English equal groups) than between Groups II and III (Spanish-English equal and English-dominant groups). Dominance of English was associated with the sharpest increase in achievement.

Two findings of the study need to be considered jointly: (a) Group I and II subjects are achieving substantially below grade level, and (b) Group I and II subjects perceive themselves as above average in ability. Although these disparate findings can be reconciled in terms of the position of the children relative to their

reference groups, the fact remains that the children are at a disadvantage in competing within the larger society and self-appraisal is not realistic in terms of the larger society. The data suggest that the children are capable of achieving at a higher level, but believe that their present level is adequate. At the time of testing in October, 1970, the mean mental age of Group I was 13 months below chronological age, but achievement was 30 months below grade level; the mean mental age of Group II was 5 months below chronological age, but achievement was 16 months below grade level. The mean mental age of Group III was 9 months above chronological age, and achievement was 4 months above grade level. As acculturation increased, the discrepancy between ability and achievement decreased.

The isolation of ethnic and SES groups in schools appears to affect both peer standards and teacher standards of performance. Low teacher standards in Group I schools are evidenced by the fact that average grades are assigned to children achieving two and a half years below grade level. Wilson (1959) showed that school districting produces school populations with markedly different value systems which result in different levels of aspiration

and academic achievement. Coleman, et al, (1966) found that the characteristics of fellow students accounted for more variation in the achievement of minority group children than did any characteristics of the school facilities and for more than did attributes of staff. The implication of these findings is that Group I and II children need higher achieving models to stimulate achievement effort and that a substantial number of higher achieving children need to be integrated in order to alter the school aspiration levels materially. McPartland (1968) showed that, among black children, school desegregation was associated with higher achievement only if black pupils were in predominantly white classrooms. St. John (1970), in a review of desegregation research, concluded that evidence was more convincing with respect to social class integration than for ethnic integration, suggesting that integration of low SES Mexican-American children into predominantly middle class Anglo or Mexican-American classrooms should result in increased achievement.

St. John (1970) also pointed out that there is no data available relating to comprehensive, long-term, high quality programs in segregated minority group schools. Implementation of strategies based on the findings of this

study, together with periodic evaluation of achievement outcomes, could generate this kind of data.

The data of this study indicated that personality variables accounted for more variance in male achievement scores than in female achievement scores, and that, overall, male achievement was below female achievement. More attention needs to be paid to motivating all students, but, in particular, male students. The study demonstrated that internal control and achievement motivation were low in all groups except the highest-acculturated male group. There was a sharp increase from Group II to Group III males in both achievement motivation and achievement.

Research (Lavin, 1965) indicates that at the elementary level the teacher has a greater impact on student behavior; whereas the peer group is more influential at the secondary level. This implies that school-initiated efforts to alter achievement behavior should be more effective at the preschool or elementary level. Causality (the feeling of internal control) can be taught directly, and there are programs available to teach a causal orientation (e.g., Ojemann, 1961, and Griggs and Bonney, 1970). Theoretically, increasing the feeling of internal control should increase academic

efficiency, and internal control is believed to be a necessary precondition of achievement motivation.

The competitive attitude underlying achievement motivation appears to be absent in the Mexican-American culture, and, at the lower levels of acculturation, striving to excel over classmates may result in disapproval by the group; however, it is possible to use the group identity to arouse competition with other groups, such as other classes in the same school or between schools. The individual student's desire to achieve can be stimulated by the press to contribute to his own group's goals.

Although integration permits the manipulation of peer group characteristics as a means of increasing achievement among low SES, minority group children, the other strategies described offer an alternative when integration is, for whatever reason, not feasible. The alternative strategies also appear to have value as preparatory devices preceding integration.

# A P P E N D I X  A

## INSTRUMENTS

## LOCUS OF CONTROL SCALE

### INSTRUCTIONS

This is not a test. I am just trying to find out how people your age think about certain things. There are no right or wrong answers to these questions. Some people say "Yes" and some say "No." If you think your answer should be yes, or mostly yes, check "Yes." If you think the answer should be no, or mostly no, check "No." Remember, different people give different answers, and there is no right or wrong answer. Just check "Yes" or "No," depending on how you think the question should be answered.

1. When somebody gets mad at you, do you usually feel there is nothing you can do about it? Yes ____ No ____
2. Do you really believe a person can be whatever he wants to be? Yes ____ No ____
3. When people are mean to you, could it be because you did something to make them be mean? Yes ____ No ____
4. Do you usually make up your mind about something without asking someone first? Yes ____ No ____
5. Can you do anything about what is going to happen tomorrow? Yes ____ No ____
6. When people are good to you, is it usually because you did something to make them be good? Yes ____ No ____
7. Can you ever make other people do things you want them to do? Yes ____ No ____
8. Do you ever think that people your age can change things that are happening in the world? Yes ____ No ____
9. If another person was going to hit you, could you do anything about it? Yes ____ No ____
10. Can a person your age ever have his own way? Yes ____ No ____
11. Is it hard for you to know why some people do certain things? Yes ____ No ____
12. When someone is nice to you, is it because you did the right things? Yes ____ No ____
13. Can you ever try to be friends with another person even if he doesn't want to? Yes ____ No ____
14. Does it ever help any to think about what you will be when you grow up? Yes ____ No ____
15. When someone gets mad at you, can you usually do something to make him your friend again? Yes ____ No ____

16. Can people your age ever have anything to say about where they are going to live? Yes ____ No ____

17. When you get in an argument, is it sometimes your fault? Yes ____ No ____

18. When nice things happen to you, is it only good luck? Yes ____ No ____

19. Do you often feel you get punished when you don't deserve it? Yes ____ No ____

20. Will people usually do things for you if you ask them? Yes ____ No ____

21. Do you believe a person can usually be whatever he wants to be when he grows up? Yes ____ No ____

22. When bad things happen to you, is it usually someone else's fault? Yes ____ No ____

23. Can you ever know for sure why some people do certain things? Yes ____ No ____

MOTHER'S

INDEPENDENCE TRAINING

1. In general, how are most decisions made between you and your mother or stepmother?

CODE
- 0 She just tells me what to do
- 1 She listens to me, but makes the decision herself
- 1 I have considerable opportunity to make my own decisions but she has the final word
- 1 My opinions are as important as hers in deciding what I should do
- 1 I can make my own decisions but she would like me to consider her opinion
- 0 I can do what I want regardless of what she thinks

2. Does she let you have more freedom to make your own decisions and to do what you want than she did two or three years ago?

CODE
- 1 Much more
- 1 A little more
- 0 About the same
- 0 A little less
- 0 Much less

3. When you don't know why she makes a particular decision or has certain rules for you to follow, will she explain the reason?

CODE
- 0 Never
- 0 Once in a while
- 0 Sometimes
- 1 Usually
- 1 Always

4. When you don't know exactly why she is going to punish or discipline you, will she explain the reason to you?

CODE
- 1 Always
- 1 Almost always
- 0 Usually
- 0 Sometimes
- 0 Very seldom

5. How often does she discipline or punish you by reasoning with you, explaining, or talking to you?

CODE
- 1 Very often
- 1 Frequently
- 0 Once in a while
- 0 Very seldom
- 0 Never

FATHER'S

INDEPENDENCE TRAINING

1. In general, how are most decisions made between you and your father or stepfather?

CODE
- 0 He just tells me what to do
- 1 He listens to me, but makes the decision himself
- 1 I have considerable opportunity to make my own decisions but he has the final word
- 1 My opinions are as important as his in deciding what I should do
- 1 I can make my own decisions but he would like me to consider his opinion
- 0 I can do what I want regardless of what he thinks

2. Does he let you have more freedom to make your own decisions and to do what you want than he did two or three years ago?

CODE
- 1 Much more
- 1 A little more
- 0 About the same
- 0 A little less
- 0 Much less

3. When you don't know why he makes a particular decision or has certain rules for you to follow, will he explain the reason?

CODE
- 0 Never
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- 1 Usually
- 1 Always

4. When you don't know exactly why he is going to punish or discipline you, will he explain the reason to you?

CODE
- 1 Always
- 1 Almost always
- 0 Usually
- 0 Sometimes
- 0 Very seldom

5. How often does he discipline or punish you by reasoning with you, explaining, or talking to you?

CODE
- 1 Very often
- 1 Frequently
- 0 Once in a while
- 0 Very seldom
- 0 Never

## SELF-CONCEPT OF ABILITY

1. I feel that I just cannot learn.

CODE

| | | | |
|---|---|---|---|
| 4 | Never | 1 | Most of the time |
| 3 | Seldom | 0 | Always |
| 2 | Sometimes | | |

2. How do you rate yourself in school ability compared with your closest friends?

CODE

| | | | |
|---|---|---|---|
| 4 | I am among the best | 1 | I am below average |
| 3 | I am above average | 0 | I am among the poorest |
| 2 | I am average | | |

3. How do you rate yourself in school ability compared to all other people your age?

CODE

| | | | |
|---|---|---|---|
| 4 | I am among the best | 1 | I am below average |
| 3 | I am above average | 0 | I am among the poorest |
| 2 | I am average | | |

4. Do you think you have the ability to complete high school?

CODE

| | | | |
|---|---|---|---|
| 4 | Yes, definitely | 1 | Probably not |
| 3 | Yes, probably | 0 | Definitely not |
| 2 | I don't know | | |

5. Do you think you have the ability to complete college?

CODE

| | | | |
|---|---|---|---|
| 4 | Yes, definitely | 1 | Probably not |
| 3 | Yes, probably | 0 | Definitely not |
| 2 | I don't know | | |

# ACHIEVEMENT MOTIVATION

We would like to know how you feel about many things. There are no right or wrong answers to any of these questions, so please write down how you <u>really feel</u> about what you are asked in the following pages. Your answers will not be seen by anyone connected with the school, and will not be put into your school records. Some of these questions will seem alike but please try to answer all of them. Please work quickly, and if you need any help, the person who is giving this to you will try to help out. Thank you very much.

Number _____ Sex: Boy _____ Girl _____

School _____

Listed below are some things people have said about how they <u>really feel</u>. Please read each statement carefully, think about it and then indicate in the space provided what you really think about the statement. You can show us what you think by putting a circle around the words you agree with. Circle only one answer for each statement.

EXAMPLE:

| | | | | |
|---|---|---|---|---|
| Money is more important than personal happiness. | Strongly Agree | Slightly Agree | Slightly Disagree | (Strongly Disagree) |

(THIS ANSWER INDICATES STRONG DISAGREEMENT WITH THE STATEMENT.)

| | | | | |
|---|---|---|---|---|
| 1. I like to be able to say that I have done a hard job well | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 2. I like to do my very best in whatever I try | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 3. I would like to do something really big. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 4. I like to take on jobs that others know are hard. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 5. I like to be able to do things better than other people | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 6. I'd like to be an expert in some job, or something else | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 7. I like to do things that other people find hard | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 8. I enjoy work. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |

IF YOU HAVE ANSWERED ALL THE QUESTIONS ON THIS PAGE, GO TO NEXT PAGE.

| | | | | | |
|---|---|---|---|---|---|
| 9. | I get mixed up when a job makes you do a number of different things. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 10. | Often I don't do a job I know I should | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 11. | When people say I'm not doing well on a job it slows me down. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 12. | When I feel nervous it helps me to try harder. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 13. | I hope I can go to college. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 14. | I often try to think of ways to get out of hard things to do. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 15. | Sometimes I do all I can to avoid hard jobs. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 16. | I hate to face up to a hard job. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 17. | I always finish what I start, even if it is not very important. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 18. | Even though I may worry about something I have do do, I usually get it done. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 19. | I have trouble getting started doing things I should do. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 20. | I try so hard to do the things I should that I usually do not do as well as I would like. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 21. | Someone looking over my shoulder when I am working makes me very nervous. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 22. | I am often the last one to give up trying to do a thing. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 23. | It is the steady worker who usually gets the most done. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 24. | I try to do things well, even though I may not like them. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 25. | I can't keep my mind on one thing. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 26. | I try to read many books each month. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |

IF YOU HAVE ANSWERED ALL THE QUESTIONS ON THIS PAGE, GO TO NEXT PAGE.

| | | | | | |
|---|---|---|---|---|---|
| 27. | I never do as well as I think I should. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 28. | I don't like the kind of work that makes you do many different things. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 29. | I find it hard to keep my mind on what I'm doing. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 30. | I find it easy to work once I have started on it. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 31. | Even though it is hard, I always like studying in school. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 32. | I enjoy doing hard work more than that which is easy. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 33. | I don't believe there is any work I like to do. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 34. | I am a careful person in whatever I do. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 35. | I always try to get my work done. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 36. | I do not like to read. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 37. | I have trouble remembering what I read. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |
| 38. | I usually get my work done even if it is not very interesting. | Strongly Agree | Slightly Agree | Slightly Disagree | Strongly Disagree |

SOCIOECONOMIC STATUS

INSTRUCTIONS: Place a check after the highest grade your father and your mother finished in school.

| Father | | Mother | |
|---|---|---|---|
| 1. | 0 to 6th grade _____ | 1. | 0 to 6th grade _____ |
| 2. | 7th to 9th grade _____ | 2. | 7th to 9th grade _____ |
| 3. | 10th to 11th grade _____ | 3. | 10th to 11th grade _____ |
| 4. | Graduated from high school _____ | 4. | Graduated from high school _____ |
| 5. | 1 to 3 years of college _____ | 5. | 1 to 3 years of college _____ |
| 6. | Graduated from college _____ | 6. | Graduated from college _____ |

Father's Job _____
(Tell what he does, not where he works)

FAMILY LANGUAGE USAGE

| Question |
|---|
| 1. What language do your parents speak to each other? |
| 2. What language do you use in talking to your brothers and sisters? |
| 3. What language do you use in talking to your arents? |

CODE

4 English all of the time
3 English most of the time
2 English about half the time
1 A language other than English most of the time
0 A language other than English all of the time

# A P P E N D I X  B

## REFERENCE TABLES

TABLE I

DESCRIPTION OF SAMPLE

(N = 128)

| Variable | Mean | SD |
|---|---|---|
| Sex | .47 | .40 |
| Acculturation Total | 6.26 | 3.60 |
| Item 1 | 1.52 | 1.23 |
| Item 2 | 2.62 | 1.30 |
| Item 3 | 2.13 | 1.50 |
| SES Total | 6.65 | 3.51 |
| Father's Education | 1.82 | 1.45 |
| Mother's Education | 1.77 | 1.32 |
| Father's Job | 3.08 | 1.42 |
| Locus of Control | 14.06 | 2.88 |
| Total Independence Training | 6.15 | 2.20 |
| Mother's Independence Training | 3.24 | 1.29 |
| Father's Independence Training | 2.91 | 1.37 |
| Self-Concept of Ability | 13.71 | 2.20 |
| Achievement Motivation | 41.41 | 13.08 |
| California Total | 487.28 | 76.89 |
| California Reading | 497.34 | 84.67 |
| California Arithmetic | 482.75 | 69.65 |
| California Study Skills | 505.88 | 86.72 |
| English Grade | 7.27 | 3.30 |
| Math Grade | 6.29 | 3.23 |

TABLE II

ACCULTURATION GROUPS

| Group | Sex | Number | Family Language Usage Score | Frequency | Group Total |
|---|---|---|---|---|---|
| I | Males | 16 | 0 | 4 | |
| | | | 1 | 5 | |
| | | | 2 | 2 | |
| | | | 3 | 5 | |
| I | Females | 19 | 0 | 5 | |
| | | | 1 | 3 | |
| | | | 2 | 4 | |
| | | | 3 | 7 | 35 |
| II | Males | 25 | 5 | 7 | |
| | | | 6 | 12 | |
| | | | 7 | 6 | |
| II | Females | 28 | 5 | 8 | |
| | | | 6 | 13 | |
| | | | 7 | 7 | 53 |
| III | Males | 19 | 10 | 8 | |
| | | | 11 | 9 | |
| | | | 12 | 2 | |
| III | Females | 21 | 10 | 7 | |
| | | | 11 | 11 | |
| | | | 12 | 2 | 40 |

TABLE III

DESCRIPTION OF SEX BY ACCULTURATION GROUPS

| Variable | Acculturation Groups | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Group I | | | | Group II | | | | Group III | | | |
| | Male | | Female | | Male | | Female | | Male | | Female | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Acculturation Total | 1.50 | 1.17 | 1.68 | 1.25 | 5.96 | .73 | 5.96 | .74 | 10.63 | .68 | 10.81 | .68 |
| Item 1 | .19 | .40 | .21 | .42 | 1.56 | .82 | 1.21 | .83 | 2.79 | .63 | 2.90 | .70 |
| Item 2 | 1.13 | 1.02 | 1.26 | 1.10 | 2.40 | .91 | 2.64 | .68 | 4.00 | .00 | 3.95 | .22 |
| Item 3 | .19 | .40 | .21 | .42 | 1.96 | .54 | 2.14 | .71 | 3.89 | .32 | 3.95 | .22 |
| SES Total | 4.50 | 3.01 | 3.68 | 2.19 | 6.12 | 2.52 | 5.82 | 2.60 | 9.32 | 2.58 | 10.29 | 3.32 |
| Father's Education | 1.25 | 1.29 | .89 | 1.24 | 1.56 | 1.23 | 1.39 | 1.17 | 2.68 | 1.11 | 3.19 | 1.40 |
| Mother's Education | .88 | 1.15 | .74 | .81 | 1.84 | 1.03 | 1.50 | 1.32 | 2.79 | 1.08 | 2.71 | 1.10 |
| Father's Job | 2.38 | 1.20 | 2.05 | 1.08 | 2.72 | .68 | 2.93 | 1.15 | 3.95 | 1.51 | 4.38 | 1.53 |
| Locus of Control | 13.13 | 1.82 | 13.68 | 2.11 | 14.12 | 3.48 | 14.04 | 3.46 | 15.42 | 2.80 | 13.86 | 2.48 |
| Total Ind. Training | 5.25 | 2.27 | 5.32 | 2.24 | 5.68 | 2.04 | 6.11 | 1.83 | 7.37 | 1.77 | 7.10 | 2.52 |
| Mother's Independence | 2.94 | 1.34 | 2.79 | 1.44 | 2.92 | 1.15 | 3.29 | 1.30 | 3.63 | .96 | 3.86 | 1.35 |
| Father's Independence | 2.31 | 1.40 | 2.53 | 1.26 | 2.76 | 1.42 | 2.82 | 1.28 | 3.74 | 1.24 | 3.24 | 1.37 |
| Self-Concept of Ability | 13.31 | 3.20 | 12.89 | 2.58 | 13.64 | 2.86 | 12.86 | 2.58 | 15.11 | 2.13 | 14.71 | 2.37 |
| Achievement Motivation | 41.00 | 12.66 | 39.42 | 8.62 | 40.84 | 9.28 | 39.29 | 12.05 | 51.37 | 17.09 | 37.24 | 12.41 |
| California Total | 438.00 | 53.50 | 434.68 | 36.39 | 461.32 | 71.74 | 495.79 | 66.80 | 530.58 | 71.07 | 552.81 | 77.36 |
| California Reading | 452.00 | 59.40 | 441.79 | 45.39 | 477.36 | 88.34 | 488.54 | 69.33 | 554.84 | 82.24 | 565.62 | 78.87 |
| California Arithmetic | 438.31 | 42.67 | 434.47 | 38.64 | 470.84 | 64.40 | 496.11 | 69.58 | 513.74 | 63.36 | 528.63 | 76.59 |
| California St. Sk. | 452.19 | 70.79 | 434.84 | 42.00 | 488.48 | 82.28 | 503.32 | 73.42 | 559.21 | 76.77 | 586.95 | 69.19 |
| English Grade | 5.81 | 3.73 | 7.58 | 2.14 | 4.80 | 3.14 | 8.64 | 2.53 | 7.53 | 3.36 | 9.00 | 3.08 |
| Math Grade | 5.75 | 3.15 | 5.53 | 3.15 | 4.16 | 2.49 | 7.25 | 3.22 | 6.47 | 3.27 | 8.48 | 2.52 |

TABLE IV

DESCRIPTION OF ACCULTURATION GROUPS

| Variable | Means | | |
|---|---|---|---|
| | Group I | Group II | Group III |
| Sex | .46 | .47 | .48 |
| Acculturation Total | 1.59 | 5.96 | 10.72 |
| Item 1 | .20 | 1.39 | 2.85 |
| Item 2 | 1.19 | 2.52 | 3.98 |
| Item 3 | .20 | 2.05 | 3.92 |
| SES Total | 4.09 | 5.97 | 9.80 |
| Father's Education | 1.07 | 1.48 | 2.94 |
| Mother's Education | .81 | 1.67 | 2.75 |
| Father's Job | 2.21 | 2.82 | 4.16 |
| Locus of Control | 13.40 | 14.08 | 14.64 |
| Total Independence Training | 5.28 | 5.89 | 7.23 |
| Mother's Independence | 2.86 | 3.10 | 3.74 |
| Father's Independence | 2.42 | 2.79 | 3.48 |
| Self-Concept of Ability | 13.10 | 13.25 | 14.91 |
| Achievement Motivation | 40.14 | 39.84 | 43.95 |
| California Total | 436.34 | 478.55 | 541.69 |
| California Reading | 446.89 | 482.95 | 560.23 |
| California Arithmetic | 436.39 | 483.47 | 521.18 |
| California Study Skills | 443.51 | 495.90 | 573.08 |
| English Grade | 6.70 | 6.72 | 8.26 |
| Math Grade | 5.64 | 5.71 | 7.47 |

TABLE V

COMPUTER PROGRAMS USED IN ANALYSIS OF DATA

| Program | Type of Analysis | Origin of Program | Location of Program |
|---|---|---|---|
| AVAR23 | Double classification analysis of variance, group comparisons | Ed Stat V Library | University of Texas Computer Center |
| ANOVA | Simple analysis of variance, group comparisons | Ed Stat V Library | University of Texas Computer Center |
| LINEAR | Linear regression analysis | Ed Stat J Library | University of Texas Computer Center |
| DISTAT | Distribution statistics and standard scoring | Ed Stat V Library | University of Texas Computer Center |

TABLE VI

CORRELATIONS BETWEEN VARIABLES FOR TOTAL SAMPLE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sex | 1.00*** | -.00 | .05 | -.04 | -.02 | .01 | .01 | .08 | -.04 | .07 | -.05 | .11 | .22* | -.13 | -.02 | -.09 | -.05 | -.38*** | -.28** |
| 2. Accult. Tot. | | 1.00*** | .86*** | .87*** | .95*** | .61*** | .49*** | .53*** | .49*** | .16 | .33*** | .23** | .09 | .50*** | .48*** | .43*** | .56*** | .15 | .22* |
| 3. Item 1 | | | 1.00*** | .56*** | .77*** | .47*** | .40*** | .46*** | .47*** | .05 | .30*** | .13 | .08 | .28** | .28** | .24** | .36*** | .01 | .06 |
| 4. Item 2 | | | | 1.00*** | .77*** | .53*** | .41*** | .46*** | .47*** | .21* | .25** | .28** | .09 | .55*** | .53*** | .46*** | .58*** | .24** | .26** |
| 5. Item 3 | | | | | 1.00*** | .63*** | .52*** | .58*** | .49*** | .15 | .33*** | .22* | .08 | .50*** | .47*** | .45*** | .56*** | .16 | .27** |
| 6. SES Tot. | | | | | | 1.00*** | .88*** | .84*** | .82*** | .26*** | .33*** | .26** | .02 | .56*** | .54*** | .52*** | .61*** | .26** | .19* |
| 7. Fath. Ed. | | | | | | | 1.00*** | .64*** | .59*** | .16 | .27** | .21* | .03 | .43*** | .42*** | .39*** | .47*** | .17 | .10 |
| 8. Moth. Ed. | | | | | | | | 1.00*** | .53*** | .20* | .33*** | .25** | -.01 | .43*** | .42*** | .43*** | .53*** | .20* | .17* |
| 9. Fath. Job | | | | | | | | | 1.00*** | .34*** | .26** | .20* | .03 | .55*** | .54*** | .49*** | .57*** | .29** | .18* |
| 10. Locus of Con. | | | | | | | | | | 1.00*** | .19* | .17 | .20* | .24** | .32*** | .18* | .19* | .09 | -.11 |
| 11. Ind. Thng. | | | | | | | | | | | 1.00*** | .29** | .26** | .27** | .28** | .25** | .28** | .25** | .12 |
| 12. Self-Conc. | | | | | | | | | | | | 1.00*** | .43*** | .48*** | .49*** | .42*** | .46*** | .40*** | .30*** |
| 13. Ach. Mot. | | | | | | | | | | | | | 1.00*** | .21* | .29** | .14 | .10 | .20* | .02 |
| 14. Cal. Total | | | | | | | | | | | | | | 1.00*** | .93*** | .92*** | .85*** | .66*** | .48*** |
| 15. Cal. Read. | | | | | | | | | | | | | | | 1.00*** | .75*** | .80*** | .60*** | .38*** |
| 16. Cal. Arith. | | | | | | | | | | | | | | | | 1.00*** | .79*** | .59*** | .48*** |
| 17. Cal. St. Sk. | | | | | | | | | | | | | | | | | 1.00*** | .50*** | .44*** |
| 18. English Grade | | | | | | | | | | | | | | | | | | 1.00*** | .53*** |
| 19. Math Grade | | | | | | | | | | | | | | | | | | | 1.00*** |

*p ≤ .05 (r = .173)
**p ≤ .01 (r = .226)
***p ≤ .001 (r = .291)

TABLE VI

CORRELATIONS BETWEEN VARIABLES FOR TOTAL SAMPLE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sex | 1.00*** | -.00 | .05 | -.04 | -.02 | .01 | .01 | .08 | -.04 | .07 | -.05 | .11 | .22* | -.13 | -.02 | -.09 | -.05 | -.38*** | -.28** |
| 2. Accult. Tot. | | 1.00*** | .86*** | .87*** | .95*** | .61*** | .49*** | .53*** | .49*** | .16 | .33*** | .23** | .09 | .50*** | .48*** | .43*** | .56*** | .15 | .22* |
| 3. Item 1 | | | 1.00*** | .56*** | .77*** | .47*** | .40*** | .46*** | .47*** | .05 | .30*** | .13 | .08 | .28** | .28** | .24** | .36*** | .01 | .06 |
| 4. Item 2 | | | | 1.00*** | .77*** | .53*** | .41*** | .46*** | .47*** | .21* | .25** | .28** | .09 | .55*** | .53*** | .46*** | .58*** | .24** | .26** |
| 5. Item 3 | | | | | 1.00*** | .63*** | .52*** | .58*** | .49*** | .15 | .33*** | .22* | .08 | .50*** | .47*** | .45*** | .56*** | .16 | .27** |
| 6. SES Tot. | | | | | | 1.00*** | .88*** | .84*** | .82*** | .26*** | .33*** | .26** | .02 | .56*** | .54*** | .52*** | .61*** | .26** | .19* |
| 7. Fath. Ed. | | | | | | | 1.00*** | .64*** | .59*** | .16 | .27** | .21* | .03 | .43*** | .42*** | .39*** | .47*** | .17 | .10 |
| 8. Moth. Ed. | | | | | | | | 1.00*** | .53*** | .20* | .33*** | .25** | -.01 | .43*** | .42*** | .43*** | .53*** | .20* | .17* |
| 9. Fath. Job | | | | | | | | | 1.00*** | .34*** | .26** | .20* | .03 | .55*** | .54*** | .49*** | .57*** | .29** | .18* |
| 10. Locus of Con. | | | | | | | | | | 1.00*** | .19* | .17 | .20* | .24** | .32*** | .18* | .19* | .09 | -.11 |
| 11. Ind. Trng. | | | | | | | | | | | 1.00*** | .29** | .26** | .27** | .28** | .25** | .28** | .25** | .12 |
| 12. Self-Conc. | | | | | | | | | | | | 1.00*** | .43*** | .48*** | .49*** | .42*** | .46*** | .40*** | .30*** |
| 13. Ach. Mot. | | | | | | | | | | | | | 1.00*** | .21* | .29** | .14 | .10 | .20* | .02 |
| 14. Cal. Total | | | | | | | | | | | | | | 1.00*** | .93*** | .92*** | .85*** | .56*** | .48*** |
| 15. Cal. Read. | | | | | | | | | | | | | | | 1.00*** | .75*** | .80*** | .60*** | .38*** |
| 16. Cal. Arith. | | | | | | | | | | | | | | | | 1.00*** | .79*** | .59*** | .48*** |
| 17. Cal. St. Sk. | | | | | | | | | | | | | | | | | 1.00*** | .50*** | .44*** |
| 18. English Grade | | | | | | | | | | | | | | | | | | 1.00*** | .53*** |
| 19. Math Grade | | | | | | | | | | | | | | | | | | | 1.00*** |

*P ≤ .05 (r = .173)
**P ≤ .01 (r = .228)
***P ≤ .001 (r = .291)

TABLE VII

CORRELATIONS BETWEEN VARIABLES FOR MALES

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Accult. Total | 1.00*** | .55*** | .41** | .54*** | .46*** | .26* | .37** | .21 | .39*** | .22 | .26* | .43*** | .40** | .42** | .45*** | .17 | .11 |
| 2. SES Total | | 1.00*** | .88*** | .90*** | .79*** | .40** | .29* | .13 | .33** | .27* | .13 | .49*** | .43*** | .51*** | .52*** | .19 | .06 |
| 3. Fath. Ed. | | | 1.00*** | .72*** | .53*** | .23 | .28* | .15 | .30* | .20 | .17 | .36** | .31* | .37** | .37** | .12 | .00 |
| 4. Moth. Ed. | | | | 1.00*** | .59*** | .36** | .35** | .21 | .36** | .31* | .08 | .46*** | .43*** | .48*** | .59*** | .20 | .16 |
| 5. Fath. Job | | | | | 1.00*** | .50*** | .14 | .01 | .21 | .16 | .05 | .45*** | .41** | .43*** | .47*** | .15 | -.04 |
| 6. Locus of Con. | | | | | | 1.00*** | .28* | .15 | .30* | .32* | .32* | .44*** | .49*** | .39** | .33** | .26* | -.05 |
| 7. Total Ind. Trng. | | | | | | | 1.00*** | .78*** | .86*** | .36** | .34** | .27* | .30* | .21 | .26* | .26* | .22 |
| 8. Moth. Ind. Trng. | | | | | | | | 1.00*** | .36** | .23 | .20 | .21 | .25* | .11 | .22 | .22 | .15 |
| 9. Fath. Ind. Trng. | | | | | | | | | 1.00*** | .36** | .35** | .23 | .24 | .23 | .21 | .21 | .21 |
| 10. Self-Concept | | | | | | | | | | 1.00*** | .33* | .58*** | .53*** | .57*** | .51*** | .57*** | .36** |
| 11. Ach. Mot. | | | | | | | | | | | 1.00*** | .42** | .46*** | .35** | .23 | .42** | .15 |
| 12. Cal. Tot. | | | | | | | | | | | | 1.00*** | .94*** | .91*** | .85*** | .68*** | .32* |
| 13. Cal. Read. | | | | | | | | | | | | | 1.00*** | .75*** | .80*** | .62*** | .30* |
| 14. Cal. Arith. | | | | | | | | | | | | | | 1.00*** | .79*** | .63*** | .30* |
| 15. Cal. St. Sk. | | | | | | | | | | | | | | | 1.00*** | .54*** | .28* |
| 16. English Grade | | | | | | | | | | | | | | | | 1.00*** | .54*** |
| 17. Math Grade | | | | | | | | | | | | | | | | | 1.00*** |

*P ≤ .05 (r = .253)
**P ≤ .01 (r = .333)
***P ≤ .001 (r = .426)

TABLE VIII

CORRELATIONS BETWEEN VARIABLES FOR FEMALES

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Accult. Total | 1.00*** | .66*** | .56*** | .53*** | .57*** | .06 | .30* | .31* | .19 | .25* | -.09 | .56*** | .55*** | .45*** | .66*** | .15 | .32** |
| 2. SES Total | | 1.00*** | .88*** | .81*** | .84*** | .15 | .36** | .32** | .28* | .26* | -.09 | .62*** | .63*** | .53*** | .69*** | .41*** | .33** |
| 3. Path. Ed. | | | 1.00*** | .59*** | .61*** | .10 | .26* | .19 | .25* | .23 | -.11 | .49*** | .52*** | .41*** | .55*** | .27* | .20 |
| 4. Moth. Ed. | | | | 1.00*** | .49*** | .04 | .31* | .29* | .23 | .18 | -.14 | .44*** | .42*** | .41*** | .55*** | .31* | .24* |
| 5. Path. Job | | | | | 1.00*** | .22 | .35** | .33** | .24 | .24* | .03 | .61*** | .65*** | .53*** | .64*** | .45*** | .33** |
| 6. Locus of Con. | | | | | | 1.00*** | .11 | .20 | -.03 | -.00 | .05 | .08 | .14 | .03 | .06 | -.05 | -.14 |
| 7. Tot. Ind. Trng. | | | | | | | 1.00*** | .84*** | .82*** | .22 | .20 | .27* | .27* | .28* | .29* | .27* | .03 |
| 8. Moth. Ind. Trng. | | | | | | | | 1.00*** | .38** | .22 | .16 | .23 | .27* | .19 | .26* | .29* | -.01 |
| 9. Path. Ind. Trng. | | | | | | | | | 1.00*** | .15 | .17 | .22 | .17 | .28* | .21 | .16 | .06 |
| 10. Self-Concept | | | | | | | | | | 1.00*** | .52*** | .43*** | .45*** | .32** | .42*** | .37** | .34** |
| 11. Ach. Mot. | | | | | | | | | | | 1.00*** | .05 | .11 | .00 | -.00 | .17 | .02 |
| 12. Cal. Total | | | | | | | | | | | | 1.00*** | .93*** | .92*** | .85*** | .67*** | .59*** |
| 13. Cal. Read. | | | | | | | | | | | | | 1.00*** | .76*** | .79*** | .67*** | .47*** |
| 14. Cal. Arith. | | | | | | | | | | | | | | 1.00*** | .79*** | .60*** | .61*** |
| 15. Cal. St. Sk. | | | | | | | | | | | | | | | 1.00*** | .52*** | .59*** |
| 16. English Grade | | | | | | | | | | | | | | | | 1.00*** | .43*** |
| 17. Math Grade | | | | | | | | | | | | | | | | | 1.00*** |

*P ≤ .05 (r = .238)
**P ≤ .01 (r = .313)
***P ≤ .001 (r = .400)

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# V I T A

Dorothy Brady Rogers was born in Detroit, Michigan, on September 23, 1923. After graduation from Brackenridge High School, San Antonio, Texas, she attended Trinity University at San Antonio, the University of Mexico at Mexico City, and the University of Texas at Austin. She received the degree of Bachelor of Arts and Sciences with a major in Spanish from the University of Texas in 1945. Following graduation, she was employed as a social worker with the State Department of Public Welfare in San Antonio and, in 1952, married Edgar A. Rogers of San Antonio. In August, 1959, she entered the teaching field and began graduate work at Our Lady of the Lake College in San Antonio, Texas, receiving an M.Ed. in counseling from that institution in 1963. From 1963 to 1970, she was employed as a staff psychologist with the San Antonio Independent School District. She entered the Graduate School of the University of Texas at Austin in June, 1967, and was elected to The Honor Society of Phi Kappa Phi in 1970. She was awarded the degree of Doctor of Philosophy in Educational Psychology in August, 1971, and will be employed as an educational diagnostician

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